The Bradshaw Lecture

ON

SUBJECTIVE SENSATIONS OF SOUND.

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MR. PRESIDENT AND GENTLEMEN,—I am little likely to be misunderstood if I say that I approach the task of delivering the Bradshaw Lecture with a deep sense of sadness. It is a task, Sir, that was committed to me by your predecessor in words of personal desire which must have had for anyone, and for many reasons had for me, the force of a command. The keen pleasure with which I looked forward to its execution before him, as President, who was then my oldest medical friend, has left me only the melancholy satisfaction of thereby fulfilling the last official request he gave as occupant of the highest and most honoured post in our profession. His was a mind that could not even know a thought that was inconsistent with the highest honour of our profession, a disposition ever ready to give, without a thought of return, with the pure benevolence in which self-interest can have no motive place—ever ready to aid by the sympathy that helps others to endure or to strive, and by the wise counsel that only such sympathy can make effective—a man from whose lips I believe there never fell one unkind word, yet stern to condemn and firm to resist the wrong, a personification of that which is to us the highest and the best, fitly manifested by an outward grace still fresh in all our memories. That he has passed from us, that we enjoyed his personal influence as our head for so brief a time, is felt, I feel sure, by no one, Sir, more than by you, whose esteem for him was exceeded by that of no one, and who shared so equally with him the esteem of this College, as was once strikingly demonstrated within its walls.

I propose to ask you to consider some features of the sounds that are heard when no external cause for them exists—subjective auditory sensations. Not long ago I took advantage of another opportunity to consider the visual sensations which are of similar character, and the analogy of those of hearing, together with an extensive collection of observations, suggested my choice of a subject.

The time at my disposal makes it impossible even to attempt a general account of the subject. All that I propose to do is to present to you some of the more salient facts that have come under my notice regarding the two chief forms of these sensations, those of labyrinthine and of central origin, to endeavour to do this in such a way as may bring out those features and relations which seem to me to be of most importance. Especially I desire to indicate the points to be attended to in future observations in the hope that I may enable these to increase definitely our useful knowledge. No orderly arrangement is indeed possible. The facts themselves not only are so various and varied as to baffle adequate classification, but they present so tangled a skein, or rather net-work, that their separation is not possible except by force. To tear asunder that which is interwoven is an easy means of distinction. But we must be content with a less effective way and try to trace where we cannot disentangle, and to perceive where the interlacing strands are chiefly gathered together. While such limitation of the subject has the advantage of giving a greater insight into a series of symptoms it has the disadvantage of restricting the range of observation. The cases in which the subjective sounds depend upon disease of the middle ear have come very little under my notice. They are seen chiefly by the aural surgeon. This is, however, less important, because such causes are effective through their action on the labyrinth and the study of sounds of labyrinthine and central origin are of chief importance. I should add that the rare sounds that can be heard by another person (usually the effect of an intracranial aneurysm) are also not considered. Curious they are, but without relation to my subject, and, as I shall explain, those auditory sensations which are associated with insanity also transcend its scope. I should also state that the limits and character of the sketch I have to offer you preclude any assumption of originality on my part, as they also preclude reference to the work of others. I mention this because I doubt not that many things I have to say have been said before, and to those by whom they have been said I offer this explanation.

Among the facts that I shall have to mention are some relating to the power of hearing certain musical notes. Little information would be gained by the simple mention of these notes, either as a letter numbered according to the corresponding octave, as C^2, or by the number of vibrations per second which constitute the sound. I have therefore asked Mr. Hawksley kindly to give me his help. He will make each sound a definite conception by means either of a tuning-fork or of that most useful aid to clinical observation, a Galton's whistle, by which high notes can be produced with precision, ranging from 4000 vibrations, two octaves above the treble clef, to the utmost capacity of the human ear, 18,000 or 20,000 vibrations a second, and, indeed, far higher, when a cat will start, though there is absolute silence to us. Although age lessens the power of hearing these high notes, the significance of early and one-sided loss renders the service of this instrument in diagnosis very great.

The resemblance which exists between the subjective sensations of vision and those of sound is superficial; the difference is profound and it is also instructive. Subjective visual sensations are chiefly of central origin and in themselves chiefly of physiological interest, while those of hearing are to a large extent produced in the sensory organ itself. They are often so obtrusive, and even distressing, that by the sinister dignity of a special name, the symptom has almost come to be looked upon as a disease. A definite designation is, however, at least a testimony to the frequency and reality of the suffering that is caused. It would be harmless were it not that names, once called into existence as our servants, are never long content with servitude. Too often we find ourselves controlled by them, and that which is only a symptom, when it has been named tends to be looked on as a disease, sometimes so definite that the investigation of its cause is hindered.

The frequency with which the ear, and the rarity with which the eye, is the cause of subjective sensations is also of indirect significance. We are apt to place these two senses much too near together in our thought. Both are, indeed, excited by energy in the form of motion and of wave motion. Hence they present points of resemblance which may attract more attention than does the difference, and, indeed, distance, between them. Consider—for the question is of importance for us,—consider the difference involved in the frequency of the vibrations that act on each organ. If we take a colour about the middle of the visible spectrum and a musical note below the middle of the treble clef we shall find that, in the interval of time between two successive waves of sound, there occur about one million million waves of light. It is not surprising, therefore, to find that, whereas the waves of sound occur only in media so definitely material that they can be weighed, the waves of light occur in a medium which is not only imponderable, but in which that quality is carried up to the hypothetical. Further, the waves of light can be traced upwards until they vanish to our direct perception, though beyond them, and their actinic successors, there seem to be almost ultra-ethereal waves of such a nature that they can be only designated by the algebraic symbol for that which is unknown; on the other hand, the waves of sound pass down to the coarser motion which can be only felt. It is a familiar fact that all the lower waves of sound can be felt by the sense of touch if only they occur in a medium sufficiently inelastic. With this is associated yet another difference, the waves of light, like the common waves of water, are transverse to the line of propagation ("transversal" waves, according to the double adjectival form which physicists have revived). But the waves of sound are "direct"; they occur in the line of propagation, as the motion between billiard balls when one at the end of a row is struck and that at the other end flies off. These "direct" or "end-on" variations (as they might be called) manifestly possess a greater impetus, and such wave motion is nearer to the simple motion of a

mass, by which the nerves of touch are commonly affected. These facts, which point to an essential identity between the stimulus of touch and that of sound, are not disturbed in their significance by the special character of many auditory sensations, such as musical notes. Their significance is, moreover, carried further by the facts of development, which show a common (epiblastic) origin for the structures that subserve each form of sensation; by the facts of anatomy, which show that sound is received by minute hairs that act upon the nerves; and by the facts of comparative anatomy, which show the early form of the ear to consist simply of hairs upon the skin connected with a special nerve, homologous with that of hearing in higher animals. We shall presently see in other ways the importance, for our subject, of this relation of hearing to the sense of touch, but I may point out that it removes one apparent anomaly—the fact that one part of the auditory nerve seems to have nothing to do with hearing. Although we cannot say that sound does not act upon the structures of the semi-circular canals, we cannot doubt that their chief function is to cause nerve impulses to be produced by the simple motion of the fluid within them and its varying pressure on the hairs in their dilated ends. We have in this a response to the very simplest form of motion, quite as simple as that which excites the nerves of touch. And I would ask you especially to note the fact that, in the same organ, structures which closely resemble each other give rise to sensory impulses which seem to us quite different on superficial observation, but may ultimately prove to be alike. The impulses produced in the semi-circular canals do not act upon consciousness, although their effects may do so. This should teach us not to regard conscious sensation as a test of the nerve impulses that may be produced in other structures of the ear.

I may safely assume that the chief features and varieties of tinnitus are known to you, and the limitations of time compel this assumption. You know that tinnitus may be a continuous sound or pulsating, and that in the latter case the pulsations correspond to the arterial waves. You know also how many and extensive are the variations in character, from the simplest to the most elaborate sound. The very frequent coincidence of these sounds with evidence of ear disease, varying in seat and character, but usually involving the labyrinth and commonly limited to it, compel the conclusion that the most common source of these sounds is the internal ear, in which the auditory nerve is normally excited. But we have cases, especially those in which the sensations are the warning of epileptic fits, in which we must regard the auditory centre in the cortex of the brain as their source, and in rare cases the correctness of this conclusion has been proved by the discovery of organic disease in this region. It is strange that we have practically no evidence to show that any part of the intermediate path between the organ of hearing and the auditory cortex may be a cause of such sensations. We should indeed, hardly expect them to be due to a morbid process in the nerve fibres which conduct the auditory impulses, but the grey matter at the junction of the pons and the medulla, which seems to be an intermediate centre, might reasonably be thought occasionally to give rise to impulses which produce, in the centre the effect necessary for a sensation of sound. Yet such evidence is not forthcoming. We are led at once to some important considerations by the common name of the symptom—"tinnitus aurium" or "tinnitus capitis,"—in popular language, "noises in the ears" or "noises in the head." Leaving for the present the reference of the sound to the head itself the question arises, Why is the subjective sound referred to the ear and not to the external world? Subjective visual sensations always seem of outside origin, why do not those of hearing? The answer is complex and brings before us many points connected with the subject. The apparent source of the sound seems to be, in part, a matter of mental inference. Continuous sensations—hissing or buzzing, for instance—seem as a rule to be of external origin when they are first observed, but their persistence soon convinces the sufferer that they cannot be; knowing that they must have their origin in the ear, he ceases to refer them to an external cause, and they then seem to him to be felt in the ear, although often, if he can separate the sensation and the inference, he can still for a moment realise that they seem due to something outside. It is so also with brief unfamiliar sounds. At first—now and then, indeed, always—they seem to have an external cause, but their repetition involves the knowledge that they have not, and the knowledge so acts on consciousness that their aural source seems to be felt. An instance of this was afforded by a patient who was subject occasionally to the sound of a bell several times repeated. When he first became liable to the sound he actually sent a message to his next-door neighbour asking that the clock might be stopped, the sound of which so much annoyed him, and he only discovered the subjective nature of the sound when he was informed that the neighbouring house did not contain a single striking clock. An instance of persistent reference to an external cause was a girl subject to a sound so perfectly resembling two or three taps at the door, that, in spite of her past experience of their subjective nature, she frequently called out "Come in." Another was a woman who had long been liable to attacks of a rumbling sound, each lasting from a quarter to half a minute, but was never able to distinguish them from distant thunder. Even after she had long known of their subjective nature she would ask persons near her whether they did not hear distant thunder. More elaborate sounds generally seemed external, but, on the other hand, pulsating tinnitus is almost always referred to the ear even from its commencement. It may be compared by the patient to machinery and the like, but only as regards its character. The mechanism of pulsation in tinnitus is a question of very great interest, because this feature is common when there is no increase in arterial pulsation and when there is no auditory hyperæsthesia. Of course, it is met with in both these conditions, but I am referring now only to the common form. I must leave the consideration of the possible explanation of this feature, but I think that this sensation is seldom or never purely auditory, although it is only from the observation of very intelligent patients that the fact can be ascertained. There is a local sensation beside that of sound; it is, perhaps, generally perceptible only as a local character of the sound; sometimes, however, it is distinctly a suggestion of a pulsating sensation within the ear distinct from that of hearing. This fact gives importance to other local sensations not auditory. One patient with labyrinthine deafness and attacks of vertigo had occasionally, as an isolated symptom, a brief sensation which could only be described as a "rushing out" through the ear, evidently much more a simple sensation than a sound. Another patient, a man aged fifty years, with changes, probably gouty, in the left labyrinth, causing some deafness, had a buzzing noise which would occasionally change to a throbbing sensation certainly not auditory; and sometimes there would occur behind the ear a momentary sensation as if the bone were being crushed in, neither pain nor sound. These cases show how much we need more facts on this point from patients with the ability to observe. I think (or shall I say I fear?) that there must be many members of our own profession capable of adding much to our knowledge from their personal experience.

It is not altogether difficult to understand such a feature as the local sensation I have referred to. We cannot doubt that nerve impulses are continually passing from the ear to the brain of which we have no consciousness. Disease of the internal ear may cause pain. Wherever pain may be caused—for instance, by inflammation—there must be afferent nerves, however free from sensibility the structure normally may seem to be. Wherever there are afferent nerves those nerves must be in constant activity, in some degree, as a condition of their functional capacity. In such an organ as the ear morbid states which act on the auditory nerves may readily produce impulses also in nerves that are of different function—impulses that act on consciousness. We can feel sure that unfelt afferent impulses are constantly produced in the middle ear. They must be continuously generated by its muscles. The action of at least one of these may cause a strong sensation, and the fact can be verified without difficulty. In many individuals, probably in all, a voluntary contraction can be produced in, apparently, the stapedius muscle. By closing the eyes tightly, and then trying to turn the eyeballs up, a loud fluttering sensation is produced in the ear, which continues as long as the contraction in the face lasts. It is in part a sound, but in greater part a simple sensation, evidently the result of muscular contraction. A little practice will enable those who are sufficiently curious to produce it very readily by a mere contraction of the orbicularis.[1]

[1] In passing I may note that if it is due to the stapedius, which is supplied by the same nerve as the orbicularis palpebrarum, the facial nerve, there is this interest in it that the function of the stapedius is believed to be to guard the labyrinthine structures from undue shock, by instantly contracting when sudden pressure tends to force the membrane in to which the stapes is attached, while the office of the orbicularis is, of course, to guard the eye. Thus each of these muscles which act together is the guardian of the organ of sense.

The nerves through which this sensation is produced must be constantly excited without sensation by the changes in the state of the muscles, which, we cannot doubt, are constant. A similar fluttering sensation may be a morbid symptom. A woman aged fifty-three years was liable to occasional attacks of severe neuralgic pain in the left side of the head, and when the pain was at its height a fluttering in the left ear could be perceived lasting five or ten minutes at a time. Moreover, she presented an illustration of another association of these sensations; during the severe pain she would sometimes hear an occasional loud noise referred to the front of the ear and compared to guns going off. There is also some evidence to show that a spontaneous contraction in this muscle during sleep is the cause of the sensation of falling with which a dream is usually associated.

I shall have presently to refer to the sounds that are referred to the head, but I may anticipate this to mention a very curious instance of another sensation not quite auditory. If we conceive the function of the cochlea as blending into tone, by repetition, the quickly recurring waves that are rhythmical, it is a curious question how we should hear such musical notes if the cochlea were absent. If the waves had sufficient amplitude, sufficient impetus, and were not too frequent, they would be perceived as isolated sounds, as are the vibrations by the sense of touch. Indeed, a tuning-fork vibrating twenty times a second is thus perceived if held near the ear.[2] A very intelligent woman, after the cessation, under treatment, of paroxysmal headaches, became liable to a musical sound which seemed to fill the head and was accompanied with a strange feeling of extreme fulness of the head. Her hearing was perfect to all tests. She could hear Galton's whistle up to 8000, 12,000, and even 16,000 vibrations a second. External noises prevented the subjective sound from being noticed. On sounding various tuning-forks she identified the sound as C^2—that is, the C below the treble. But the sound was always immediately preceded by a distinct sense of vibration in the head, which would sometimes remain as such, and at other times change to the sound. When she touched the sounding tuning-fork with her finger she said the feeling was exactly the same as that of the vibration she experienced in the head. I give this curious fact without comment. I believe the sensation is accurately described and that the observation may be trusted. It is possible, perhaps probable, that the sensation was of central origin, but there must be a correspondence between the central action and peripheral excitation, and the effects of the latter may be primarily central. A similar sense of vibration is met with in other cases, although not frequently, and its associations deserve careful study. A woman aged fifty years had labyrinthine deafness, slight in the right ear and moderate in the left, with slight continuous sound, for many years. She had also had three attacks of more considerable tinnitus in the preceding four years, apparently in both ears, the second of which was said to have been accompanied with deafness, and yet with peculiar sensitiveness to sound, and to have ended soon after a great increase in the sound. The last attack had existed for six months and was characterised by a frequent sound in the head; it might be general, or more on one side or on the other. It was usually a very rapid vibration, but at times had been like music, although not any definite tune. Yet if she heard a tune played on the piano she would often continue to hear it after the instrument had ceased. This case also illustrates the association of cephalic vibration with musical tone. It also illustrates the apparent coöperation of the centre in the effects of labyrinthine change.

These two cases are examples of the point next to be considered, the reference of subjective sounds to the head and not to the ear. The second case conforms to an explanation often given—that subjective sounds produced simultaneously in both ears seem to the sufferer to be in the head. This is occasionally true; but exceptions are, I think, more frequent. Bilateral tinnitus may be referred solely to the ears, and sounds may be referred to the head which are produced only on one side. We see in this, moreover, the difference between abnormal local excitation of the nerves and their normal stimulation; when the latter occurs on both sides the sound is always referred to an external cause. Sensations produced in one labyrinth are sometimes referred only to some one part of the head on that side. In one case of left-sided labyrinthine deafness, the sound was always referred to the left side of the head, but it seemed to spread when loud through the whole head; it was never referred to the ear. In other cases I have met with it has been referred to the parietal region, to the parietal and occipital, to the occipital only, and in one with considerable nerve deafness a persistent rumbling sound was always referred to the region between the temple and the vertex, never to the ear or any other part. In these cases of one-sided head-sound the extension to the whole head, when the sound becomes louder, is very common.

It is not easy to suggest an explanation of these varieties of localisation. We may, however, remember that the sound of a tuning-fork applied to any part of the head is referred, approximately, to the region on which it is placed, quite apart from the sense of vibration communicated to the bone, although many or even most waves must reach the labyrinth by the membrana tympani and ossicles, they pass also from the bone to the membranous labyrinth, either directly, where two are connected, or through the perilymph. The correct localisation of the sound must be due to the precise group of nerve endings that are chiefly stimulated. Since the causes of labyrinthine tinnitus are for the most part random processes, the nerve endings may be affected in various combinations, and it must happen that sometimes these combinations are such as to correspond to those that would be excited from some part of the skull. The same subjective localisation will then occur. Yet cases are met with which seem to baffle all attempts to explain the apparent localisation. A woman with slight bilateral nerve deafness, who was unable to hear high notes, and on the right side could not hear any tone above C^1 (about 2000 vibrations per second), described a continuous squeaking sound, which was not referred to the ears, but seemed to her to be inside each parietal bone and to be loudest on the side on which hearing was least affected. The subjective sound in this case corresponds roughly to that which the patient was unable to hear—a noteworthy instance of the double effect of local disease in hindering and causing sensation.

It is a curious fact that the subjective sounds which originate in the auditory centre in the cortex are referred to the same seats as those of labyrinthine origin. This is frequently the case with the central sounds included in this survey—those that occur as the warning of epileptic fits. When these are elaborate they are, it is true, referred to the external world, but when they are simple or "crude" they generally seem to the patient to be produced either in the head or in one or both ears. As examples I may mention a whistling sound referred to both ears, a similar sound referred to both sides of the head above the ears, a buzzing sound which seemed to pass through the head from one ear to the other, a whistle referred to the ear on the side on which the subsequent unilateral convulsion occurred, and a whistle seemingly at the top of the head in one case and in another at the occiput. To the character of these epileptic sensations I shall have to return.

Some of the characters of the sounds that are due to labyrinthine disease have been already referred to and others will have to be mentioned in connexion with points yet to be considered. These variations are so great as to baffle any attempt at minute classification, as they also baffle the capacity of language. Our vocabulary, however extensive, is quite inadequate to describe our sensations, and the similes to which the sufferer has recourse are often misleading. A rough division may be made into (1) crude sounds, such as hissing, humming, machinery, rumbling, and the like; (2) tones, as a whistle, simple musical note, or the sound of a bell; and (3) elaborate sounds such as music or voices distinct or indistinct. We cannot usefully separate the continuous and pulsating sounds because a continuous sound so frequently becomes pulsating when it is louder. Yet it is probable that the difference is of significance when invariable—when a sound, for instance, remains continuous, however loud it at times becomes, or remains pulsating, however slight it may often be. The precise character of sounds needs to be carefully noted since it will probably prove to be important, when we obtain more careful and discriminating observations, pathological and therapeutical.

One feature, which promises occasionally to be of definite practical importance, is the relation of the tinnitus

[2] By many persons, but to some ears the continuous tone can be perceived, though even to them the effect of the separate waves is more obtrusive. I should, perhaps, state that the commonplace physiology of this lecture is purposely given in a simple, applied form.

to external sounds. In the majority of cases the subjective sound is heard most when there is silence—sometimes is noticed only then. Doubtless external sounds often merely prevent its notice, although we cannot be so sure that this is all. There are cases in which external sounds increase the tinnitus and some of these are both curious and noteworthy. There may be a peculiar hyperacusis, by which certain sounds seem especially loud and unpleasant and seem to increase the subjective sound. Although this feature suggests central coöperation the cases present evidence of labyrinthine change. Yet such coöperation seems the only way to explain another symptom met with especially in this connexion, the occurrence of an echo or repetition of the sound not always in the same pitch. A man aged seventy years, with slight reduction of hearing, not equal on the two sides, experienced such an echo with musical notes and high-pitched voices; every syllable seemed repeated in a lower note, although of the same duration. I found that the sound of C^3 tuning-fork and higher sounds were thus repeated, but the C^2 was not. It seems to be impossible to explain the change of note as of labyrinthine origin. But in one case of the kind the labyrinthine affection was secondary to disease of the middle ear two years before, with lasting perforation of the tympanic membrane. A rushing sound was varied by buzzing and by an occasional sound like the ringing of several bells. Loud sounds seemed to pass straight to the middle of the head; some notes of the piano were particularly distressing, and the sound of these was repeated as an echo. Allied to this symptom is another—the addition of an abnormal quality to sounds that are heard. For instance, a peculiar clanging character was added to all sounds in a gouty patient thirty-four years of age with labyrinthine deafness and also other forms of more simple tinnitus. This may be conceived as labyrinthine, but it is often associated with a sense of discord and with increased sensitiveness, hyperacusis, which may be either peripheral or central. It is often very difficult to say to which seat the sense of discord is to be attributed. All music sounded discordant to a woman aged thirty-seven years who had double slight labyrinthine deafness, not equal, with simple tinnitus on the side of better hearing. On this she could hear the higher tuning forks (C^3 and C^4) better than the lower (C^2 and C^3), but no note of Galton's whistle. Once she had a sudden sound as if a coach-horn were blown. These symptoms suggest that the discord was peripheral. But she also sometimes heard a sudden sound as if someone had spoken to her, and the impression that this was a fact was strong for a moment, although she could never distinguish the words—a symptom which can hardly have been other than central.

I regret that time prevents me saying more on the coöperation of the centre in labyrinthine disease. The production of a morbid functional state of the centre in consequence of the impulses that reach it, which involves the addition of central sensations to those of labyrinthine origin, is a question of some importance in regard to treatment. Simple hyperacusis is not common. I have mentioned a case in which it was partial, but co-existed, strange to say, with slight deafness, the sounds which succeeded in stimulating the nerves being heard too loudly. Again, a highly cultured man aged fifty-seven years had slight nerve deafness on both sides, with tinnitus chiefly on the left, seldom on the right. It was like "gas escaping," and he had an occasional noise in the head described as a "churning." But a moderate sound was heard too loudly; water poured into a bath sounded to him like the noise of a waterfall, and the voice of a person speaking was heard with unpleasant loudness, and also in a confused manner, which seemed to make it difficult to distinguish the words in spite of their loudness. It caused a distressing sense of mental strain, and sometimes a similar effect is met with of a character distinctly suggestive of temporary word deafness. I leave unnoticed the cases without sign of local disease, in which a combination of pulsating tinnitus and hyperacusis is met with in cases of general increased sensitiveness of the nervous system, when all sensory impressions are too acutely felt, and the arterial pulsations affect the nerves of the ear so as to influence consciousness.

The threads of this subject interlace in such a manner as inevitably to lead us, if not astray, at least away from the point under special consideration. I have thus been led to wander from a question of some practical importance, the induction of tinnitus by sound. It is not often well marked, especially in such tinnitus as can be reasonably regarded as labyrinthine, but such cases occur, and an important point is the beneficial influence of silence upon them. A clergyman aged fifty-four years, certainly gouty, began to suffer, at the age of fifty, from gradual deafness of the right ear, tinnitus, and attacks of vertigo. An aural surgeon found the meatus and middle ear to be normal. The deafness was almost complete to high notes, C^2 being heard but not C^3; the voice being, however, heard fairly well. The subjective sound was continuous in character, but it was slight or absent when there was external silence, and was excited by any loud sound of more than brief duration. A short ride in a cab would make it loud, although at starting he had been free. The effect of the music in his church was so great that for a time he had to abstain from duty, and the influence of his own voice, if he read aloud for an hour, was distressing. Either influence would cause the sound to become such that he compared it to "the blowing off of a full head of steam in a locomotive." Even then, if he retired to his room, in perfect silence, the sound would gradually lessen and in the course of two hours would cease entirely. In this case great benefit was obtained by following the indication thus afforded and securing prolonged freedom from external sound.

As might be anticipated, a large proportion of the cases of aural tinnitus which have furnished the ground for these remarks were brought under my observation by the vertigo with which it is so frequently associated. But this common result of the irritation of the labyrinthine nerves is only within our survey so far as the subjective sounds are related to its occurrence. We refer the vertigo to the coincident affection of the semicircular canals by the same morbid process which, in the cochlea and vestibule, gives rise to the subjective sounds. That we are justified in doing so by the few definite facts we possess is, I think, undoubted. The relation of the subjective sounds to the giddiness is, however, extremely variable. In current descriptions of aural vertigo it is often said that the noise becomes suddenly and rapidly louder to a culmination with which sudden intense giddiness coincides. But this relation is quite exceptional. Such increase of sound may occur and culminate, for instance, in a sudden crash, without any attendant giddiness. But a gradual increase often precedes the vertigo. In the case of the clergyman just mentioned the increased loudness of the sound was often followed by an attack of giddiness, until he learned the effect of external silence. He found that when this had diminished the subjective sound he was safe from an attack of vertigo. This is a significant fact, although one not to be too hastily interpreted. It seems, however, to show that there is a certain solidarity, so to speak, in the labyrinthine functions for which we should scarcely be prepared by the difference in their apparent character, although it agrees with the continuity of the labyrinthine structures. Moreover we can trace a like solidarity in the corresponding central functions, as we shall presently see. In other cases the tinnitus exists only just before the vertigo, although without any increase or culmination. In a man aged thirty-six years with labyrinthine deafness on one side only and attacks of severe vertigo the sound occurred only two or three minutes before each attack of giddiness. It seemed to him to be in both ears and was compared to a very loud roaring without pulsation. But the sound may simply coincide with the giddiness and not precede it. This was the relation in several cases, with evidence of one-sided labyrinthine change, causing deafness, in which the sound was pulsating and was compared to machinery, a steam-engine, and the like. In another case, a clergyman aged thirty-eight years, a continuous hissing sound occurred only during attacks of giddiness, which was accompanied by nausea and sometimes by retching. The sound and the vertigo always began together and the sound ceased as the vertigo gradually passed away in the course of a few hours. The sound was referred to the left ear, but no permanent deafness could be discovered, although, as long as the noise lasted, in spite of the fact that it was not very loud, he had great difficulty in hearing; a strong voluntary effort was needed to enable him to discern the nature of external sounds. This peculiar difficulty, needing a mental strain to overcome it, is probably a central symptom and is not very rare. In some other cases with definite one-sided labyrinthine deafness, a pulsating sound, compared to machinery or a steam-engine, was also limited to the vertigo. This relation is, as I have said, difficult to explain. But so also are instances elsewhere of the sudden paroxysmal effect

of a process that is gradual and perhaps stationary. We have a similar phenomenon in the paroxysmal lightning pains of stationary tabes. These may occur during years, although the morbid process is unchanged. These tabetic pains are perhaps a more pertinent analogy than the sudden attacks of pain in neuralgia, because we have good reason to refer the pains of tabes to the changes at the extremity of the sensory nerves, to which also our knowledge leads us to refer the attacks of tinnitus. Doubtless causes which we sometimes can, but more often cannot, discern determine the attacks, just as changes in the weather have so potent an influence in determining the pains of tabes.

Let us leave the ear itself and turn to the centre to which its impulses pass. As I have said, in the symptoms of epilepsy we can feel reasonably sure that we have to deal solely with the features of central sounds, although we cannot limit them to that disease. These higher auditory sensations vary much in character; they may be crude or elaborate. But I am reluctantly compelled to pass by the subjective sensations which have a mental character, the hallucinations and illusions and the warnings of epilepsy which consist of a sense of spoken words. To touch upon their relations would carry us too far, and away from the region with which we have been specially concerned. They have to do with instability in the higher functional regions of the brain, as is illustrated by the fact that epileptics with such an aura are in far greater danger than others of becoming insane. The cruder auditory sensations which usher in a fit, severe or slight, deserve careful consideration. One fact, to which I have already referred, is the occasional association of a subjective sound with the sense of definite vertigo which is alone so very common a warning. In some cases the commencing central discharge mimics pure aural vertigo in a way that is alike curious and suggestive as well as often puzzling. The difficulty that is caused in diagnosis is the greater because there are cases of aural vertigo in which the suddenness and character of the disturbance produces actual loss of consciousness. These cases are quite distinct from epilepsy and yet the superficial resemblance is close. This combined epileptic aura is another illustration of the fact of which I have just spoken—the very close connexion which exists in the central processes between the two functions of the labyrinth and also between the two symptoms which their disturbance generates. The sound which accompanies the epileptic vertigo is as simple as that which occurs in the labyrinthine form, and the fact which makes the association so difficult to understand is that all our knowledge points to the motor centres as the source of the sensation of giddiness, while that of sound is purely sensory. After all, however, the connexion does but illustrate and emphasise the fact I have already mentioned—that since all the sensory impulses produced at the periphery are perceived through a related activity of the higher centre functional processes in this must be possible, corresponding to every peripheral process, and it also illustrates the fact that the readiness with which associations are produced from the periphery must entail a corresponding central facility. The processes of the epileptic discharge seem to be sometimes quite random in their character, although they are the same, by developed habit, in successive discharges.

We have already considered the varied localisation of these central sounds, but some other features deserve at least a brief mention. Even the pulsatile character of aural tinnitus may be reproduced in the centre. It is unquestionably a rare symptom, but is of great interest. In a highly complex aura which I have recorded elsewhere, a sensation of beating in the chest passed up to the head and there became a pulsating sound, accompanied by two lights before the eyes, which approached with a rhythmical motion. We must, I think, ascribe this character to the mechanical influence of the arterial pulsations on the discharging centre. We know the influence of such pulsation upon pain, we know the susceptibility of nerve structures to mechanical influences, and we must assume that, in the process of actual discharge, all their susceptibility is raised to the highest degree. The influence is, therefore, not difficult to understand, whether the pulsatile pressure augments or hinders the progressive liberation of the nerve energy. It is not rare for the central sound to be described as "machinery," and this generally implies pulsation. A vibrating sound compared to the noise of a faradaic apparatus (which reminds us of the vibrations already considered in relation to musical tones) was referred to the left ear by one patient as the warning of left-sided fits. Here, again, we have in a very curious degree the central reproduction of peripheral impressions.

Although the elaborate sensations of psychical character, definite words and the like, are not within my subject, I may mention that in patients with such a warning of severe attacks the minor attacks—*petit mal*—may be characterised by a quite crude auditory sensation. In one case of the kind simple "buzzing" referred to both ears, with obscuration of consciousness, constituted the slight attacks, while the onset of the severe seizures was characterised by a vision of figures who spoke intelligible words.

In leaving the higher centre we must, however, let it carry us again to the labyrinth. A point that is not only of interest, but will prove, I think, of practical importance, is the coöperation of the centre in determining the character of the sounds produced by labyrinthine irritation. This is not difficult to understand when we consider how disturbing to the central structure must be constant abnormal impulses from the ear. The fact which raises this question is the frequency with which labyrinthine deafness is associated with sounds of such elaboration that it is very difficult to think that they are solely peripheral in nature. Another important question also is thus brought before us, What degree of elaboration of sound is consistent with a purely labyrinthine origin? Of course, the crude sounds, which have occupied us so much, we must regard as peripheral. On the other hand, elaborate sounds, such as a voice uttering distinct or even indistinct words, must be regarded as central. But there are other forms of tinnitus that cannot be referred with certainty to the labyrinth alone. To it, indeed, we may reasonably ascribe all sudden, simple tones, when we consider the analogy of the brief momentary sensations of pain which are experienced in tabes, and the grounds we have for ascribing them to the morbid action of the degenerated nerve endings. This applies especially to the sudden sound of a bell, which is not rare, or even to repeated bell-like sounds. But we must, I think, recognise a secondary central action in such a case as that of a woman aged forty-three years, in whom, after an attack of giddiness, bilateral tinnitus referred to the ears commenced and increased gradually. It was a buzzing sound, loudest at night. After a time there was an occasional change, for a few hours or days, to that which seemed to her just like a band of musical instruments. She described it as so distinct that, although she could not recognise the tune, she believed that if she had been acquainted with harmony she could have written down the full musical score. At times also she seemed to hear voices, and although she never could distinguish words the sound was that of a human voice, and occasionally she had seemed to hear herself called. But this was no real hallucination. She referred all these sounds to the ears, and they never seemed to her for a moment to be of external origin.

There is much more that I should like to say that I must leave unsaid. I should have liked to refer to some conceptions of the process of stimulation of the special senses which might establish more unity in our conceptions, and with this to have considered the probable relation of the energy which excites to the nerve impulse that is excited, and the nature of this. But this subject is too fascinating for me to touch upon it now. I especially desired also to call attention to some series of facts related to my special subject. One is the frequency with which labyrinthine tinnitus becomes associated with unpleasant cephalic sensations, feelings of pressure, fulness, throbbing and the like, constant or varying, and sometimes related to the sound in a way which connects them with the sounds and other paroxysmal sensations referred to the head itself. And I also desired to mention some facts which have come under my notice regarding the relation of tinnitus to paroxysmal neuralgic pain either in the ear or head—facts of much suggestiveness that would, however, need some time for their consideration, because even in outline this would need to be careful and deliberate. All these, however, I must leave, but leave, I hope, only for a time.

It is strange how few facts we have regarding the pathological changes which underlie the symptoms in the common class of cases, with some deafness, tinnitus, and often vertigo, gradual in onset, and often slowly progressive. It is strange, because our Poor-law infirmaries and workhouses contain always many cases of the kind, because modern methods have increased so much the revealing power of the microscope,

and because the present generation of workers are not prone to leave neglected any unexplored field. But we can surmise much with reasonable sureness. In cases with striking and unusual symptoms conspicuous changes have been found, concretions and the like. Further, we know that the parts chiefly concerned are a fibrous or fibro-epitheliated structure, in which epithelial hairs receive the sound vibrations, and in some way these excite nerve impulses in the delicate structures by which the two are united, and we know with what extreme readiness this process must be deranged and how minute a structural alteration may suffice. We know, also, that this membranous labyrinth may be the seat of acute inflammations, of which the most significant is that which occurs in early life, and sometimes in adults, as the effect of a catarrhal blood state, one of those peculiar toxic states which have a special local incidence, for the inflammation is limited and symmetrical. It is now generally recognised that when there is complete deafness as the sole result of what was regarded as an attack of meningitis in early life, the malady was not meningitis but bilateral inflammation of the labyrinth, the general cerebral symptoms of which closely resemble those of meningitis. We have in this fact, not only the indication of a special blood state, but also of special susceptibility on the part of the labyrinth. We know from many other facts that such susceptibility to acute inflammations of this kind on the part of fibrous structures involves also a proneness to suffer from chronic changes in later life, especially in cases where there is an inherited rheumatic or gouty tendency, the tendency which may be called, and I think has been called, "tissue gout." We can thus understand the fact, so often illustrated, that these chronic labyrinthine changes are especially common in such subjects. We also know that in late life, apart from such predisposition, the tendency to analogous affections of other fibrous structures is common, as in the great tendency to chronic rheumatism in the old, which we may ascribe to the influence on the tissues of waning vitality, coupled with the effect on the blood of the age-imperfection of the organs on which the blood state chiefly depends. It happens that only a week ago a pertinent illustration of this came under my notice. A man aged fifty eight years, with some family history of rheumatism, although not of known gout, had suffered from vertigo and for some years from tinnitus and from deafness. His tissue tendencies were clearly shown by a contraction of the palmar fascia of one hand, of the ulnar side, passing down the little finger and keeping it flexed. The deafness was partly labyrinthine, but was in greater degree due evidently to the middle ear, and Mr. Field's report on the cause of this was very instructive. He found on each side considerable thickening of the membrana tympani, with complete fixation of the ossicles. The latter must be due to fibroid adhesions, while the state of the membrane was doubtless an indication of that throughout the cavity, including no doubt the membranes which close the foramina leading to the labyrinth. Moreover, the clear evidence of labyrinthine deafness, in addition to the impaired conduction, leaves little doubt that there was a like condition in the labyrinth, although, perhaps, in less degree. We need to know the precise influence of such fibroid thickening on the junction of the epithelial hairs with the nerve endings. Of course, other processes, including direct injury and traumatic inflammation, are often met with in these cases.

The same symptoms are, moreover, produced by a primary atrophy of the nerve, but I should like to utter a very emphatic protest against the readiness to invoke atrophy of the auditory nerve as the morbid state whenever labyrinthine deafness is recognised in conditions in which nerve degeneration is sometimes met with, and especially in tabes. It is, indeed, partly for this reason that I have preferred, for the most part, in this lecture, to use the term "labyrinthine deafness" rather than "nerve deafness." Statistics have been published in which in every case of tabes in which there was any degree of labyrinthine deafness this has been put down as atrophy of the auditory nerve; such atrophy has therefore been said to exist in a considerable proportion of the cases, and the facts have been received and quoted as conclusive. Symptoms of more or less random labyrinthine changes, generally non-progressive, are not rarely met with in tabes. The previous life of a large number of the patients has been such as disposed them to tissue degenerations, while the effect on the blood state is often much increased by the diminished amount of exercise which the developed malady entails. Among all the cases—and I have notes of many hundred cases of tabes carefully examined—I can count on my fingers those in which there was reasonable evidence of auditory nerve atrophy. Until, therefore, we have far more definite knowledge of the symptoms of primary atrophy much more caution should be exercised in the diagnosis, or even suspicion of this change. But, as evidence of the process which cannot admit of doubt I may mention one case—a man with tabes, who had progressive bilateral deafness, presented a progressive concentric limitation of the range of hearing, quite similar to that which occurs so often in tabetic atrophy of the optic nerve. When first examined he was deaf on one side, and on the other could hear only the notes between the G below the treble and the E above it, the range of audition being thus reduced to two octaves. In the course of the next month the contraction of the range had reduced it to one octave, from the E on the lowest line to the E in the highest space, and so sharp was the limitation that while he could hear the lower E he could not hear E flat, a semitone below; soon afterwards the deafness was total. You may search in vain through the reported cases of tabetic atrophy for such evidence as this. I know that atrophy of the optic nerve does not always take this form, and it is not likely to be the only, and perhaps not the most common, manifestation of that of the auditory nerve. But the atrophy of the optic nerves is steadily progressive when once established, and we are justified in regarding with more than suspicion all cases of alleged auditory nerve atrophy in which a progressive course is not conspicuous.

It may seem at first difficult to understand that defective hearing should so constantly coincide with the production of these sensations. But the due reception of external stimuli and their adequate effect upon the nerve endings must depend on structural integrity, molecular integrity, we may say, in the superficial elements. Organic changes in these may prevent the sound waves producing their due effect, and yet may also induce the molecular alterations in the terminations of the nerves on which the spontaneous sensations depend. Once more we must remember how disproportionate are the effects upon consciousness and the processes upon which they depend. We must remember, also, another fact of at least equal importance. In the normal condition all nerve structures must be in constant functional activity—at least, in some degree. This is necessary for the maintenance of nutrition; it is a necessary effect of vitality; it is essential for the capacity of full action on an inadequate stimulation. In the case of a large number of nerves we are quite unconscious of the persistent functional action. It need be only of the slightest to subserve the constant renewal of molecules which must occur for life to be maintained and function possible; but the phenomena of disease show us that a similar persistent action is also a part of the processes of life under abnormal conditions. It seems to be as constant when nerve endings have undergone molecular changes as when they are normal. The morbid changes in the fibrous tissue of the labyrinth of which I have spoken do not necessarily destroy the nerve endings, and they only interfere with their function in so far as the terminations are altered and the access of sound waves is hindered. We can thus understand that the subjective sounds are the result, under altered conditions, of the same vital state which normally maintains the nerves in perfect readiness for instant action by a continuous unperceived activity.[3] We can understand that the damaged structure and altered molecular arrangement, while it does not impair spontaneous activity, changes its form and increases the energy of the impulses, possibly, indeed, in greater degree because the nerves are deprived of some of their normal excitation. It is not, I think, difficult to perceive that the persistence of these sounds, which seem so strange, especially when combined with deafness, is due to one of the conditions on which the functional capacity of the nerve structures essentially depends.

That which I can say regarding the treatment of these sounds must of necessity be limited to some of its principles.

[3] Regarding this continuous activity see Professor Michael Foster's lecture in THE LANCET of Nov. 7th, 1896; also note by myself on "The Dual Activity of Nerve Cells," THE LANCET, May 10th, 1890. The words "nerve structure" should apparently be now used instead of nerve cells, as I endeavoured to explain in the address published in THE LANCET of Oct. 22nd.

Details I am obliged to omit, and if that which I say seems to be meagre, believe me this subject has been before my mind throughout the preparation of this lecture more definitely than any other. Most of that which I have said tends towards this, the great object of our work, though it may be its tendency, is not always obvious. The treatment of these affections constitutes one of the most difficult and most obscure branches of therapeutics. This is not indeed surprising. We have seen to what a large extent they depend upon chronic processes. Of all slow processes of disease it may be said that the morbid process, at every period and at every stage, is an accomplished fact. Damage and cicatrisation go hand in hand, but the process of cicatrisation is not recovery. In acute disease the alterations caused in the tissue may pass away to a large extent, and the normal state to that extent may be reproduced. But a change indistinguishable from cicatrisation perpetuates all slow disease, and thus its effects necessarily endure. But we have some power even now, and we hear on every side lessons which should teach us to be very, very slow to give up hope or even anticipation, or to relax our efforts to obtain that which we now lack. How impressive is the lesson we have just had from science that the word "impossible" should find no place in our vocabulary. Even two years ago, had the wisest among us been asked the question, Is it possible that before the end of the century we should be able to see through a deal door—what would have been the answer? The humility which this should teach should equally prevent us from limiting the possibilities of power to any department of our science or any branch of the art that is founded thereupon. The reason why, through this effort to discern some of the relations of those subjective sounds, their treatment has been ever before me is because I believe that the first necessary step for the attainment of greater power is more minute and accurate recognition of their features and relations. It is through these that we must hope to be able to apply, with more prospect of good, the measures which we already know to have some influence, and by the discrimination they permit to employ any means which the future may give us. Empirical measures, on which we are obliged so largely to depend in many other maladies, have at present almost no place in the treatment of tinnitus. The treatment which is based upon a vague perception of the conditions which underlie the symptoms needs far more accurate discrimination of their character for its effective use. We know, for instance, that tinnitus is sometimes lessened by bromide, although the influence of this is far less than on the vertigo which is so often associated with it. But we know also that the influence of bromide is especially exerted on the centres in the brain. I doubt, indeed, whether we have at present any evidence of its action on the peripheral nerve structures. But the evidence I have mentioned that the auditory centres become secondarily involved in some cases and give rise to some special features of the subjective sensations is reason for a careful systematic attempt to discern the relation between such central coöperation and the power of bromide to relieve the symptoms. The possible power of relief by silence in suitable cases I have already sufficiently dwelt on. There are many cases of labyrinthine tinnitus in which counter-irritation has a considerable influence for good, but there are also many cases in which it is powerless and we are not yet able to distinguish the two. The distinction can only come, and probably will come, from careful discrimination both of the conditions under which the process develops and of the precise symptoms by which it is manifested. At present we cannot form any opinion, and certainly are not justified in forming any negative opinion, regarding the significance of differences in the minute characters of the subjective sounds. We are already supplied with so many means of lessening the morbid action of other peripheral nerves that it is strange if the early future does not yield us means of lessening, at least in some degree, that of the nerves of the labyrinth. We have almost no guidance in treatment from influences which are found by the sufferers to diminish the sound with the exception of the effect of silence already mentioned. In one labyrinthine case, it is true, the sound was always lessened by firm pressure on the posterior part of the temporal fossa, and the fact is suggestive, but it is no more. Another patient found that a diminution was always caused by inclination of the head, towards the side on which the tinnitus was heard, but this I think, is only a special example of a more frequent influence. The sound may be often lessened by pressure on the arteries of the neck. Strange to say this result has seemed to me more common when the tinnitus is a continuous sound than when it is pulsating.[4]

I cannot now pursue the possible suggestiveness of this fact, but it leads up to another. I feel compelled to mention to you one case, which has been described in Germany,[5] on account of the importance of the lesson it conveys. An elderly man had gradually become completely deaf in the right ear, with most troublesome tinnitus. The left ear was becoming deaf in the same way. The tinnitus was so loud, so persistent, and so distressing that the man had several times declared that he could endure it no longer and must end his life. This proceeding on his part was made unnecessary by the treatment which was adopted. It was found that pressure on the carotid artery diminished the sound. The right internal carotid was therefore tied. It is very difficult to understand the grounds for the operation. The blood supply to the labyrinth comes partly from the external carotid and partly from the basilar. The path by the auditory nerve to the opposite hemisphere is entirely within the blood-supply of the basilar. The opposite auditory centre is supplied by the opposite middle cerebral artery. It is thus easy to understand that the operation was found to have no effect whatever on the tinnitus. It produced left hemiplegia and left hemianopia and death resulted on the fifth day. I draw attention to this case because I think it should for ever prevent any repetition of this operation for the relief of labyrinthine tinnitus.

I wish that I could have made this lecture less unworthy, alike of this College and of the memory of him to whose request it is due. But when we find our work, our efforts to secure practical results, beset by conditions alike rugged and unyielding, one consolation is at least available—that that which is unsatisfactory now may be less so in the future. It does not do to pass such subjects by for those of greater promise. We have to till the fields to which our path may lead us, however barren they may seem, and hope that some of the seed sown, even upon stony ground, may germinate and bring forth fruit, at least in time to come.[6]

HYPOTHESES AS TO THE LIFE-HISTORY OF THE MALARIAL PARASITE OUTSIDE THE HUMAN BODY.

(Apropos of an article by Dr. Patrick Manson.)

BY DR. AMICO BIGNAMI.

Translated from the Italian by G. SANDISON BROCK, M.D. Edin., *of Rome.*

IN March of this year Dr. Patrick Manson delivered the Goulstonian Lectures[1] before the Royal College of Physicians of London on the Life History of the Malaria Germ outside the Human Body, in which, after having summarised the prevailing ideas as to the life of the malarial parasite within the human body, he discussed at length the various probabilities or possibilities in regard to its extra-corporeal existence. In so doing he has expounded a theory of his own and attempted to back it up with proofs which are, however, matters of speculation more than of observation. We will not occupy ourselves with what the lecturer says regarding the history of the life of the parasite in the human body since his remarks and observations are not new, but it will be worth while to examine briefly the lecturer's views as to the extra-corporeal life-history of the plasmodium, because even if they are not in our idea decisive of any question they may prove to be a starting point for fresh researches.

Where and how are the extra-corporeal forms of the malarial parasite to be found? asks the lecturer. There are

[4] The fact that reduction of pulsating tinnitus by pressure on the vertebrals has been described by Dr. Dundas Grant and this leads me to express a hope that those whose observations are not mentioned will note the statement in an early part of the lecture. Its scope is limited to some of the facts which have come under my personal observations and the suggestions they seem to me to present.

[5] Linsmayer: Wiener Medicinische Blätter, Nos. 8 and 9, 1893.

[6] I hope to supplement this lecture by some notes on certain of the points which had of necessity to be omitted.

[1] THE LANCET, March 14th, 21st, and 28th, 1896.

two ways, he says, by which one can proceed in this investigation. First, to grope about in external nature in a more or less blind way, trying to find some form which, from morphological or other considerations, might be supposed to be the object sought for; next, when such a form is found, to endeavour to prove by experiment its identity with the malarial germ. Secondly, to commence with the parasite as it is found in the human body and to follow it through outer nature back to man again. That the first method must expose us to disillusion and failure is evident for obvious reasons; and this has been demonstrated by the history of malaria. The lecturer, therefore, prefers the second way, which he holds to be of itself almost certain. This hypothesis assumes, then, that the parasite can return from the human body into outer nature and there undergo development, whilst, as is well known, there are no facts which lead us to believe that the malarial patient diffuses or so to say, disseminates malaria about him. That the plasmodium must emerge from its human host and afterwards complete a new phase of life extra-corporeally the lecturer takes as proven by a series of theoretical considerations. He begins by excluding the idea that the parasitic life in man is a necessity to the plasmodium for the existence of the species (necessary parasitism). The reason is obvious. Malaria abounds where man is almost never seen, where evidently the parasite must complete, without his presence, its life cycle and go on multiplying itself. He excludes also the idea of its being an accidental parasite, also for obvious reasons. One of the characteristics of accidental parasitism is its relative rarity; now it is known that there are localities where all the inhabitants are malarial. Another characteristic of accidental parasitism is that the parasite, having found its way, so to speak, into its host, does not multiply; now, the plasmodium not only multiplies in man, but can even live in him for a certain time in the latent state. As the malarial parasite can thus live and multiply altogether independently of man and in man is a guest certainly not necessary and not even accidental we are forced to conclude, according to the lecturer, that the plasmodium finds in man an alternative host from whom it can escape and propagate as a species; that man, in other words, is only one of the media in which the parasite can exist, and that there is an alternation between its life in man and its life in other external media. The plasmodium must in this way be a true parasite of man, and not merely an accidental parasitic visitor. And if it is a true parasite, seeing that a means exists by which it enters the human body, so there must also be some provision made for its escape from the body; "otherwise the extinction of the species would be inevitable on the occurrence of the death of the host." If this were not so, the plasmodium would be different from other parasites in this respect and would not conform to the general law. This conviction, founded on arguments drawn from analogy, leads the lecturer to inquire how the plasmodium escapes from the human body; for granting his sequence of ideas, this becomes one of the fundamental questions. Considering *a priori* the escape as necessary, he does not ask if this happens as a rule, but only how it happens; and takes this inquiry as a starting-point for the study of the malarial parasite in outer nature. In what form does the parasite escape, and by what means? The attention of the lecturer has been attracted by the flagellate bodies. In speaking of these he confirms first of all the fact already noted that the flagellates do not form in the preparation of blood until some time after it has been taken from the patient; it is not, therefore, a form belonging to the intra-corporeal parasite; it is a form that appears only after the blood has been abstracted from the circulation. He returns to the free spherical bodies of quartan and tertian fever already so well described by Antolisei, and re-describes their transformation into flagellates. He returns in the same way to the well-known transformation of crescents into spherical and oval bodies and into flagellates. Now, in regard to this transformation of tertian and quartan bodies and of those of semilunar origin into flagellates, is it a degenerative process, or is it a developmental change naturally occurring in the life of the plasmodium? This, as is well known, is a much-discussed question. The lecturer naturally contends, in opposition to Grassi and Feletti and others, that the change is a developmental one. I limit myself to citing his arguments. He invokes first of all the test of movement. If movement is a sign of life, then in no stage of its existence does the plasmodium show such vitality as when undergoing the transformation into the flagellate body. But Grassi has remarked that the same kind of movement can take place in dying forms or in degeneration. One cannot say in general terms that movement is a sign of life; one can only say so of special movements. Thus, when Marchiafava years ago contended, in opposition to many, that the young plasmodia without pigment are parasites and cited in proof their amœboid movements, he was justified, because amœboid movement, properly so-called, with the characteristics noted by Marchiafava, is not an attribute of degeneration of red blood-corpuscles. But it appears, on the other hand, that movements with the characteristics of those of the malarial flagellates, displaying the same vivacity, &c., are to be observed in degenerative forms. For example, the lively movements which are displayed by the bacilliform filaments which in special conditions—as, for instance, under the action of an elevated temperature originate from the red corpuscles, are well-known.

The lecturer next insists on the fact that the flagellates are one phase of the regular and normal life of the parasite in its different variations. If we examine a case of malaria long enough, says Mannaberg, we shall always find flagellates. (We admit this in regard to summer fevers, and also tertian, but not for the quartan, where the presence of flagellates, according to our experience, is very rare.) To explain the rapidity of the formation of flagellates, the lecturer says it is more a phenomenon of birth than of development; perhaps the flagella pre-exist in the semilunar and in the spherical bodies. This is an opinion very similar to that already expressed long ago by Laveran, and is, according to our idea, in the present state of the question an arbitrary one, since it is not borne out by a study of the structure of the semilunar and of the spherical bodies. But the best argument, according to the lecturer, is to be drawn from direct observation. Whoever watches, he says, the flagellate bodies forming under the microscope will be convinced that he has to deal with living forms. It is therefore purely a matter of impression, which impression may evidently be fallacious. In the same way the flagelliform filaments of the red corpuscles give the same impression, so much so that they have actually been considered as living bodies and for the very same reason. But let us admit for a moment the views of the lecturer on the life history of the parasite. Granted that they are correct, what is the function of these bodies? Their life-cycle is completed only extra-corporeally, and this explains why the flagellates are formed only outside of the body. Considering the bodies from which they originate as mature the lecturer believes that an unknown cause prevents them from sporulating while inside their human host, and he regards the flagella as special spores which only form in outer nature. The flagellate body would thus be a parasite in the state of sporulation, "whose spores in the interests of the extra-corporeal life of the plasmodium" take this special form. It is easy to oppose to this the fact that the flagella do not contain chromatin and have the aspect and the structure of simple protoplasmic filaments. How then can they be looked upon as spores?

But let us continue with our account of the lecturer's ideas. If this be the significance of the flagellate bodies, how is their escape brought about in nature? Stated generally, it may be said that parasites leave their hosts, both definitive and intermediate, in one of the following ways: either by virtue of their own efforts, or through the efforts of the organism in which they are lodged, or by the action of extraneous agents, or in consequence of the decomposition of the host after death. That which is destined to become the extra-corporeal form of the malarial parasite is enclosed in a red blood corpuscle and cannot abandon its host either by its own efforts, or by being extruded in the excreta of its host. This cannot, then, be brought about except by the intervention of an external agent or by the decomposition of the host after death. This last hypothesis the lecturer leaves out of consideration, since malaria is rarely a fatal disease and he cannot believe that the escape of the plasmodium can occur only in an exceptional way. There remains, then, only one conceivable way—namely, by the intervention of suctorial insects, and more especially of mosquitoes, whose presence in the localities infested by malaria is known to all. The lecturer is also led to adopt this hypothesis from a consideration of the remarkable similarity between the habits and requirements of the plasmodium and those of the

filariæ—parasites which the lecturer himself had already shown to be dependent on the mosquito for their liberty and the opportunity for development in outer nature. Relying upon reasons of analogy, Manson puts forward the view that the plasmodia, having escaped from man, become parasites of mosquitoes and develop in them until they reach the stage of sporulation; that they then pass from the insect and are diffused in the soil, thence returning once more into man. It is easily understood, according to the lecturer, how the plasmodia, having passed from the mosquito into water, may be re-introduced into man with the same water. On the other hand, one can imagine how they would be inhaled when the ponds dry up and the plasmodia which are present in the larvæ and have been dispersed in the water pass into the resistent phase of their life-cycle on finding themselves in conditions unfavourable to their development, probably in these conditions becoming encysted, like other protozoa in similar circumstances. The dried-up sediment of the pools, transported by the wind and by currents of air, might be inhaled by man, and thus the plasmodium would eventually find its way again into its human host. On the other hand, the mosquitoes carried along by the wind might disseminate the germ in its resistent phase even in distant places and there deposit it, to be inhaled by man in the dust raised by the wind, or to infect him in some other way, during agricultural operations, &c.

Such is the theory of Manson, to support which Surgeon-Major Ross undertook in India a series of investigations the results of which were favourable, according to the lecturer, to the hypothesis in question. Ross studied especially the cases with semilunar bodies, because these can be more easily recognised than the other malarial forms which become transformed into flagellates. The chief thing, indeed, granted the correctness of Manson's views, is to study the development of the flagellates outside the human body. Ross, taking advantage of a case of malarial cachexia in which the blood was rich in crescents, and having collected many mosquitoes which had sucked the blood of the patient, undertook to make a systematic examination at brief intervals of the blood contained in the stomach of these malarious mosquitoes. At the same time he made a control examination of the blood of the same patient, collected on ordinary slides and prepared at corresponding times. He found that in place of being killed and digested in the stomach of the mosquito the crescents proceeded in development; almost all became spheres, and at least 40 or 50 per cent. of them became transformed into flagellate bodies, whence proceeded the free flagella. According to Ross this transformation of semilunar into spherical bodies occurs rapidly in the blood after its entrance into the stomach of the mosquito, the flagellate bodies being found from seven to thirty-five minutes afterwards, or after a still longer time. The same phenomena were observed in three cases. In one case in which quinine was administered Ross noted that crescents in ordinary preparations no longer became transformed into flagellate bodies (!), whilst the same blood in the stomach of the mosquito showed flagellates as before. This would lead one to believe, according to Ross, that the sojourn in the stomach of the mosquito is so favourable to the development of the crescents as to overcome the paralysing influence of the quinine. Ross then attempted to communicate malaria to man by means of "mosquito water." To one person he administered some water in which malarialised mosquitoes had died after depositing their eggs. Eleven days afterwards the man was attacked by fever, the temperature rising to 103° F., &c., but no rigor. The fever lasted three days and subsided spontaneously; in the blood many annular forms of plasmodia were found; but although many examinations of the blood were made for two weeks no crescents appeared, nor was there any relapse. (I note that the course of this fever is so unusual for one of malarial infection that it seems to me permissible to doubt the exactness of Ross's observation: it is almost certainly an error of observation.) Ross afterwards repeated the experiment on other natives, but did not again succeed in producing fever of an unequivocal character.

According to Manson, Ross has, by these investigations, demonstrated "the first step" of his mosquito theory, proving by direct observation that the stomach of the mosquito is the natural medium in which is completed the development of the flagellated phase of the plasmodium. The aim of future researches should be, in Manson's opinion, to find out the fate of the flagella after they have become free in the stomach of the mosquito, for which purpose he believes it necessary to study these insects by means of sections and appropriate staining re-agents. Manson foresees that many objections will be raised against the mosquito theory until (as he believes will happen) a complete demonstration is arrived at, but he does not consider them insuperable. The following are the objections he enumerates: mosquitoes abound in places where there is no malaria; there is said to be malaria in places where there are no mosquitoes—e.g., in some places on the West Coast of Africa where malaria rages. To the first the answer is easy; as regards the second the lecturer has collected information from which it appears that on the West Coast of Africa the matter is not quite as represented; while admitting that in some localities where fevers are common mosquitoes are not numerous, he says that close to the places where they are scarce there are others where they abound. He attaches no value to objections of a biological kind, as, for example, those which follow from the interpretation given to the flagellated bodies by various authors who regard them as degenerative forms similar to those seen in other protozoa shortly before death. Grassi and Feletti bring forward in support of their view the fact that the nucleus of the plasmodium takes no part in the development of the flagella. Labbé affirms the same thing; but Sacharoff, who also believes them to be degenerative forms, considers "the process of the formation of flagellated bodies as the result of a perverted karyokinetic division, the nucleus dividing into chromatin filaments, which leave the parasite; these filaments, which show lively movements, represent the flagella" (!). Against the objection that the mosquitoes do not attack birds Manson asserts that this is not true, experiences in China and India proving the contrary. According to the lecturer a more serious objection to this theory would be this—that up to the present the flagellum has not been followed into the tissues of the mosquito, and he ascribes this failure to the delicacy of the object, the complicated character of the structures, and the insufficiency of our technique. So much for the hypothesis of Manson.

If I am not mistaken it would be more rational to take another starting point in the search for the forms of the malarial parasite in its extra-corporeal life. Manson has been brought by his speculations to hold as a biological fact that the plasmodia, after having lived for a variable time as parasites in their human host, leave him in order to complete extra-corporeally a new life-cycle, and from this extra-corporeal existence return again to man. But if this were true the patient, on being transported into non-malarial districts where there are suctorial insects (and non-malarial districts infested by mosquitoes are known to all), ought to disseminate malaria; whereas no instance of such an occurrence has ever been adduced. Where a disease is concerned which has been so long studied from a clinical point of view, and about which popular experience has taught us much of the more reliable information we possess, it is not likely that such a thing could have happened without attracting someone's attention. Without desiring absolutely to exclude the possibility of the escape of the parasite and its subsequent development in the mosquito we cannot take such uncertain data as a starting point in our study of the question. In support of his theory Manson invokes a general law of parasitology; but when we look for a verification of that law from an examination of the facts we are constrained to have recourse to arbitary interpretations of them. Thus, he asserts the flagellates to be a phase of life constant in all varieties of the malarial parasite, whilst in our experience in quartans they are only found exceptionally. He affirms that the flagella are spores, without bringing facts in support of the hypothesis. He interprets the observations of Ross on the way the parasites are modified in the stomach of the mosquito as proofs of a progressive development, without adducing sufficient reason for such a belief. It would be easy in the same way to hold a contrary opinion. Again, the general law which Manson cites might have exceptions, or, in other words, not be general in the strict sense. Without entering into a discussion which has already been done at length elsewhere, I desire here to call to mind the opinion already expressed by me and by Bastianelli[2] that the semilunar phase of malarial parasites, and naturally also the flagellates which are derived from them, represent abortive and sterile forms of that cycle of development which in nearly allied parasitic beings is only accomplished extra-corporeally. This view,

[2] Studi sulla Infezione Malarica, bollettino dell' Accademia Medica di Roma, 1893-94.

after all, would also agree with the general law to which allusion is made above. Now if this "necessary" escape of the plasmodium from the patient in order to complete extra-corporeally its life-cycle is more than improbable, the hope of seeing in this hypothetical escape the first extra-corporeal phase of the parasite naturally becomes very doubtful. But some way or other there is by which the parasite penetrates into the blood of man. We have nothing but theories and discussions as yet in regard to it, but if we could succeed in discovering what this way is we should perhaps have made the first step towards the knowledge of one at least of the phases of the extra-corporeal life of this creature. Indeed, it seems reasonable to think that investigation into the extra-corporeal life of the plasmodia should be preceded by the study of another problem—viz., in what manner and by what channel the malarial parasites penetrate into the blood of man.

It would take too long to explain all the theories which have been enunciated and the opinions which have been maintained upon this subject; they would nearly fill a volume. But a brief review will serve to place before us the actual state of the question. How is the fever contracted? Two theories are still discussed, that of water and that of air, according to which of these media is considered the vehicle of infection. The first, though it still counts not a few supporters, is open to an easy criticism deduced both from popular experience and from the experimental researches of Celli and Zeri. Laveran, who, as is known, is still the principal supporter of the water-conduction theory, enumerates the facts tending to show the importance of water as a means of carrying infection as follows. It has been proved several times, he asserts, that of individuals living in the same locality under identical conditions a large proportion of those drinking water from one source were attacked by fever, whilst those drinking water from another source escaped. That in certain unhealthy places it had proved sufficient, in order to bring about the disappearance of malaria, to supply pure water to the inhabitants instead of the stagnant water which they had been in the habit of using. That in very healthy places the fever can be contracted by drinking water coming from unhealthy parts, and that the individuals most susceptible to it are those who drink most water. That travellers who journey through unhealthy regions often succeed in keeping themselves free from fever by drinking only boiled water, whereas persons who do not take this precaution are struck down by it in great numbers. To the objection that infusoria and amœbæ are easily destroyed by the digestive juices Laveran answers that this may be the case where the juices are healthy, but in bad states of the digestive organs the protecting action of the juices may lose its effect. It is easy to reply that it is not on account of objections such as this that the hypothesis will cease to be tenable, but because the facts themselves upon which Laveran relies have not been authenticated. More particularly it has not been verified that the infection transmitted by water, in the way indicated above, was really malarial. It would be necessary to discuss such a question fact by fact; but already a lengthened criticism has been written upon it by Celli and Zeri, to whose works I refer the reader. Thus it has been demonstrated that the case of the ship *Argus* related by Boudin and referred to in all the treatises does not prove anything, since it is not at all likely that the soldiers of the ship were ill with malarial fever and not from some other infection. Thus, too, in the Roman Campagna popular experience in general attaches no value to water as a vehicle of infection; and in other localities where bad types of malaria prevail diligent observers, such as Ludwig Martin in Sumatra, Schellong in New Guinea, and Werner at Samara (Russia), arrive at the same conclusion.

The experimental researches which Celli has the merit of having initiated all point to the exclusion of water as a vehicle of infection. Celli made persons in the Hospital of Santo Spirito drink water collected in the Pontine marshes and in the marshes near Rome with negative results. Zeri, acting on Celli's advice, carried out three series of experiments. In the first place he made nine people drink water from malarious places in quantities of from one and a half to three litres a day, over a period of from five to twenty days, in such a way that each person consumed in all from ten to sixty litres while the experiment lasted. He next caused marsh water to be absorbed by the mucous membrane of the respiratory passages by means of a spray, experimenting upon sixteen persons in this manner. Finally, in two adults and three children he experimented by injecting the water into the intestine. In none of these experiments did he succeed in producing the fever.

It may be observed that the majority of authors arrive at the air-conduction theory of malarial infection solely by the process of exclusion. Having excluded water from being, at least as a rule, the vehicle that carries the malaria germ into man, it seems as if no other channel were left by which infection can be conveyed excepting the passages of respiration. Now of all the diseases due to infection there is none which epidemiologists hold with more certainty to owe its origin to, or at least to have a more intimate relation with, the soil than malarial fever. Its infection is closely bound up with the soil, a view in accordance with the popular experience, to which, as pointed out by Tommasi-Crudeli, we owe the most valuable part of our knowledge of the epidemiology of malaria. But if we exclude, with good reason, the possibility of the infection being carried from the soil by means of water, in what manner does it come from the soil into the air? The supporters of the air-conduction theory in this very first question encounter difficulties for the resolution of which the investigations instituted and the proofs brought forward are defective and superficial. They find another difficulty in explaining why malaria is not transported by the winds, or at least if it is why its transport should have no practical importance in connexion with the diffusion of the disease, and yet another difficulty in accounting for the notable variations in the amount of malaria borne along in the atmosphere at different hours of the day, &c.

Let us see in what manner the difficulties are met. The transport of germs from the soil into the air might happen, as von Fodor[3] remarks, by the dust rising from the surface of the malarious soil and the germs being inhaled with the dust particles. But I have observed that malaria does not behave itself after the manner of diseases due to inhalation of dust; that the more dangerous days are those that are sultry, without wind, in which least dust is raised, and especially the hot calm days which follow upon a rain, when no dust can rise from the humid ground. But many facts appear to be favourable to the hypothesis that a great factor in the transporting of malaria is the "ground-air" (Grundluft). Many observations prove that the fever is taken more easily in the evening or night than in the daytime, although during the day the air contains more dust from the surface of the soil than does the evening or night air, in which there is instead more "ground-air" present.[4] Also for the same reason, according to von Fodor, it is dangerous to lie stretched out during the day, and especially at night, whence the ancient use of high habitations, &c., and the danger of confined air stagnating in the little valleys, whilst air which is open and in free movement, although it raises dust, is not dangerous.

We may conclude, with much probability of being correct, that malaria is not likely to be conveyed from the soil in those conditions in which dust is thus blown about. But even the hypothesis of the passage of the germs from humid earth into the "ground-air" (Grundluft) encounters various difficulties not easily to be overcome. As we are aware, von Fodor passed a large quantity of "ground-air" through a nutrient solution (Klebs'), and though he continued the experiment for many months he only succeeded in developing a colony of fungi; in other respects the nutrient solution remained sterile. Naegele, Pumpelly, Miguel, and Emmerich have demonstrated that air which has passed through an extremely thin layer of earth is perfectly filtered and free from bacteria, and Emmerich showed that bacteria only pass through dried-up soil. Afterwards other observers (Buchner, Renk, Petri, &c.) arrived at the same results by aspirating the soil itself or samples of earth and finding them free from germs.[5] But we cannot content ourselves, remarks von Fodor, with these negative results because our epidemiological knowledge convinces us that some infections, for example that of malaria, are produced by micro-organisms which, according to the view generally accepted, rise from within the soil itself. Now there are some experiments which assist us in imagining how this passage of germs from the soil into the air may occur, although up to the present this has not been actually

[3] Handbuch der Hygiene, herausgegeben von Dr. Th. Weil; Hygiene des Bodens, von F. von Fodor.

[4] Von Fodor, p. 163.

[5] Von Fodor, loc. cit.

demonstrated. Thus Buchner has called attention to the physical fact that if the water-level be lowered in a water-logged soil the capillary layers of liquid which are found around the particles of earth immediately on the top become gradually thinner and form as it were liquid lamellæ until they finally break up; then a part of the water contained in the layer is sprinkled about in a fine spray and dissipated in the "ground-air" (Grundluft), by means of which it may be carried away. If the bacteria are contained in this water they also would pass into the "ground-air." It is likely that the same thing happens after rains; but it is to be borne in mind that this passage of germs into the "ground-air" can only take place through those capillary lamellæ of water which break up near the surface, since otherwise the bacteria would be again filtered by a stratum (although a thin one) of earth. This brief examination of the facts shows then that if von Fodor is induced in part to refuse credence to the experimental data, it is chiefly because in nature the malarial germs pass from the soil into the "ground-air" precisely under those conditions in which experimentally this passage has not, in the case of other germs, been demonstrated. To maintain the common hypothesis one must therefore admit that what no one has been successful in proving in a convincing way in regard to ordinary bacteria can happen with great facility and as a regular rule in the case of malarial parasites.

That the winds do not transport malaria, except perhaps for a short distance, and that they have practically almost no share in the diffusion of the disease, has been maintained for a long time by Hirsch,[6] and more recently, with much fulness of argument, by Tommasi-Crudeli. It is interesting that Hirsch avails himself of illustrations drawn from a study of the distribution of malaria in our own country of Latium. In considering the influence of the winds on the diffusion of malarial fever we ought to take into account, according to Hirsch, the modifications they produce in the state of the atmosphere and their capacity for transporting solid matters. In regard to the first point, we know that in various regions malaria is apt to prevail with a certain wind which affects the thermometric and the hygrometric conditions—e.g., with the sirocco in the malarial districts of Sicily and of the Italian mainland. The idea of the wind being the carrier of the malarial matter was started by Lancisi, the same observer who originated the theory of the paludal source of malaria; he believed that the conditions from which the unhealthiness of the Roman Campagna arose might be dependent upon the fact that after the cutting down of the woods in the reign of Gregory XIII. the emanations from the Pontine marshes found free ingress into the country round about; and other observers have concurred in this opinion and believed that it explains the baleful effects of the sirocco wind which blows towards Rome over the Pontine marshes. That the winds within certain limits may transport malaria the writer believes to have been proved by many instances, but that such a thing happens as often as has been made out appears more than doubtful. If the emanations from the Pontine marshes were the cause of the malarial fever of the Roman Campagna it is incomprehensible why Velletri, Genzano, Ariccia, Albano, &c., which are on the road between Rome and the marshes and ought to be the first and the most seriously affected by any harmful emanations carried by the wind, are, on the contrary, wholly free from malaria. If malaria could be transported by the winds for miles it would be difficult to understand its limitation to small portions of country, examples of which are to be found in Italy and other parts of Europe and in America. It would be easy to adduce many instances to prove that the diffusion of malaria by means of the winds is certainly very limited. The fact known to all that ships which anchor at a short distance from a dangerously malarial shore are not attacked by malaria is sufficiently convincing.[7] To explain these facts the most arbitrary theories are had recourse to; for example, it has been thought that the mountains might exercise an attraction on malaria and that great surfaces of water might absorb any malaria passing over them—in other words, the attempt is made to explain by unexplained natural laws things that are inexplicable.

(To be continued.)

[6] Dr. August Hirsch: Handbuch der Historisch-Geographischen Pathologie. Erlangen, 1860.

[7] Examples of places dangerously malarious near to districts completely or relatively healthy are not rare in Rome. Everyone knows that outside Porta del Popolo one can catch dangerous fevers, whilst a few hundred yards off, at the beginning of the Corso, the health of families living there even for many years is good. The Hospital of St. Michele a Ripa Grande is free, whilst at a short distance away towards St. Paul's there are places intensely malarious. The inhabitants of Palo state that in the same houses on the quay one can sleep with safety in the rooms on the sea side, whilst in those on the land side it is much easier to catch the fever. How can these and similar facts which have been communicated to me by Professor Marchiafava be reconciled with the hypothesis that the malarial germ is in the air? From the moment that the parasite is suspended in the air it is certainly not easy to understand why the aerial currents should not be able to carry it for a few hundred yards. Such examples could easily be multiplied. It is known to Professor Marchiafava that of the inhabitants of Sezze those who live in the part of the village near the hills are exempt from fever, whereas those that live at a little distance away towards the marshes catch it easily. All the inhabitants of the village drink water from the same fountain.

THE EFFECT OF THE ROENTGEN RAYS ON URINARY AND BILIARY CALCULI.

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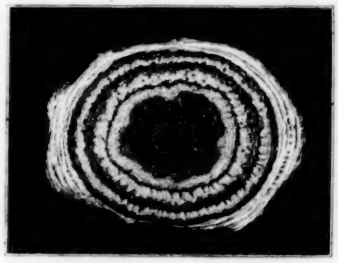
UP to the present time the New Photography has not rendered us any assistance in the diagnosis of renal and biliary calculi. Several attempts have been made for me with patients whose slight physical conformity rendered them favourable for the purpose, but hitherto without success. The interposition of the ribs, the position of the kidney close to the vertebral column, the depth of the cavity and the thickness of the overlying tissues are as yet obstacles which possibly in the near future will be overcome. In the meantime it has been a matter of some interest to ascertain the effect of the rays upon biliary and different kinds of urinary calculi after they have been removed from the body. The accompanying illustrations will give some idea of the results obtained.

Figures 1, 2, 3, and 4 represent the shadows of four sections of three vesical calculi, and Figure 5 that of a

FIG. 1.

The section of a compound calculus an inch and a half in length and an inch in width, consisting of an irregular nucleus four-tenths of an inch in diameter, with concentric rings of uric acid and urates, in a setting of fusible calculus. Two rings of uric acid and urates interrupt the phosphatic deposit. These rings and the nucleus are darker in the skiagraph than the phosphatic parts of the calculus.

FIG. 1*a*.



The same calculus as Fig. 1.

biliary calculus. All these five objects were exposed for fifteen minutes at a distance of five inches from the tube on the same plate and at the same time. The size of the plate was 6½ in. by 4¼ in. Figs. 1 and 2 represent compound calculi

FIG. 2.

The section of a fusible calculus nearly three inches long and an inch and a half broad. It is composed almost entirely of lime salts. In the lower part of the section, which is more porous than the rest, there are three crescents, one within the other, in which urates are mixed with the phosphatic material; these are imperfectly represented in the skiagraph.

composed of uric acid and urates and lime salts. Figs. 3 and 4 are unequal segments of the same calculus composed entirely of uric acid and the urates. It will be observed that Fig. 4 gives a rather darker shadow than Fig. 3, as

FIG. 2*a*.

Same calculus as Fig. 2.

would be expected from the fact that the segments of the calculus from which Fig. 4 was taken is nearly one-third thicker than that from which Fig. 3 was photographed. The section from which Fig. 1 was taken is nearly half as thick again as that from which Fig. 2 was photographed, and both these shadowgraphs are darkest where the thickness of the stones is greatest. But both the specimens represented by Fig. 1 and Fig. 2 are much thinner in section than that from which Fig. 4 was taken, and yet the shadowgraphs of the thinner sections are much darker. This shows that the lime salts of the thinner sections oppose a greater resistance to the rays than the thicker sections, which are composed entirely of uric acid and urates. The thickness of the fusible calculus represented by

FIG. 3.

The outer surface of a portion of an uric acid and urates calculus two and a quarter inches long and an inch and a half broad. It has a very thin coating of triple phosphate.

Fig. 2 is as nearly as possible the same as that of the calculus composed of uric acid and the urates represented by Fig. 3, but the fusible calculus gives much the darker shadow. This being so it is difficult to understand why in Figs. 1 and 2 the concentric layers of uric acid as seen on the sections of these calculi come out darker than the intermediate lime portions. The depth of the shadow of the nuclear area in Fig. 1 is in all probability due

FIG. 4.

A thicker portion of the same calculus as Fig. 3, seen on section, some of the laminæ of which are much darker and more compact than the rest.

chiefly to the greater thickness of the calculus and its lime coating at this part; but it is difficult to explain the greater depth of shadow cast by the concentric rings of urates and uric acid as compared with the adjacent and intervening lime layers.

It would seem as if the rays find a greater difficulty in passing through the two media when one is superimposed directly upon the other than in passing through either the lime salts or the urates separately. But this cannot be the explanation because the concentric rings represent layers deposited over the entire stone and are merely the

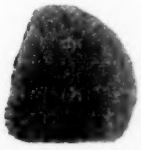
cut edges of strata which are elsewhere unseen. With the object, however, of further testing these comparative effects the specimens from which Figs. 1 and 2 were taken were each separately exposed for ten minutes at a distance of five inches from the tube. The result was that the shadow cast by the parts corresponding with the rings of uric acid on

FIG. 4 *a*.

Same calculus as Fig. 4.

the section of the mixed calculus was darker than the shadow cast by the lime portions of the same section, and darker still than the shadow cast by the uric acid calculus itself. The biliary calculus gave a depth of shadow about equal to the uric acid calculus as shown in Fig. 3, but the biliary calculus was about twice as thick as the vesical,

FIG. 5.



A gall-stone with four flat surfaces, three angles, and an apex; the base is formed by one of the surfaces. It is seven-tenths of an inch long and from six-tenths to seven-tenths of an inch thick near the base.

so that the shadow casting power of the biliary calculus is only about half that of the vesical calculus.

Fig. 6 shows the shadows of a renal calculus of uric acid and the urates removed by operation from the interior of the kidney. A is the shadow cast by it, after an exposure of four minutes, whereas B is the shadow after eighteen minutes' exposure. These results, as shown in Fig. 6, indicate how

FIG. 6.

Two shadowgraphs of the same renal calculus. A, exposed four minutes. B, exposed eighteen minutes.

easily a calculus might be missed by over exposure, supposing the rays were strong enough to penetrate the renal region; and they suggest the expediency of employing for the various substances as short an exposure as possible, or as may be found by experience to yield the best shadow effect. They also lead one to ask whether calculi composed of uric acid and the urates, and biliary calculi, would really cast any appreciable shadow when acted upon by rays strong enough to pass through the thickness of the renal or hepatic areas of the body.

The same question would not seem to arise in connexion with calculi of oxalate of lime or the mixed phosphates, for these salts leave a deeper shadow than even bone. Fig. 7

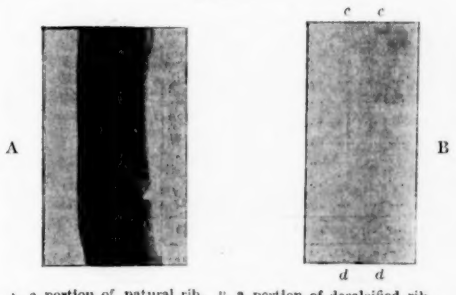
FIG. 7.

Oxalate of lime calculus on section exposed for ten minutes at a distance of twenty inches from the tube and three and a quarter inches from the plate.

is from a section of a mulberry calculus exposed for ten minutes and taken at a distance of twenty inches from the tube and three and a quarter inches from the plate. These distances probably correspond to the distance that the tube and plate respectively would be from the calculus if photographed in the living subject.

From an examination of these shadowgraphs the idea at

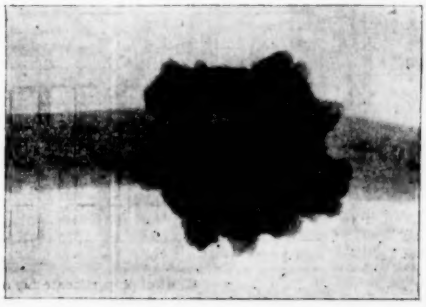
FIG. 8.



A, a portion of natural rib. B, a portion of decalcified rib. The very faint outline of B is indicated between *c c* and *d d*. Both were exposed on the same plate at the same time for ten minutes at a distance of five inches from the tube.

once arose that the depth of shadow cast by the skeleton is due to the lime salts in the bones. Accordingly an ordinary rib and a decalcified rib were exposed at the same time

FIG. 9.



Mulberry calculus on section with natural rib lying on the cut surface. The outline of the rib is only faintly traceable across the surface of the stone.

to the same plate under exactly similar conditions and with the effects shown in Fig. 8. Ten minutes' exposure left a deep shadow of the ordinary rib, whereas the decalcified one left scarcely any shadow at all. Fig. 9 shows a shadowgraph of the same calculus as that represented in Fig. 7, with an ordinary rib resting on its surface—i.e., between the tube and the calculus. It will be observed that the shadow of the calculus is much deeper than that of the bone; and the outline of the rib where lying upon the calculus can be traced only with difficulty. I have a shadowgraph of the same calculus with the decalcified rib lying on it, but the shadow of the bone is so faint that it would be impossible to reproduce the effect here.

All these photographs have been taken by Messrs. Allen and Hanburys of 48, Wigmore-street, to whom I am indebted for the skill and care which they have given to their execution.

Cavendish-square, W.

THE INVALID'S DAY AND ITS RAINFALL.

By W. W. WAGSTAFFE, B.A., F.R.C.S. ENG.,

FORMERLY SENIOR ASSISTANT SURGEON TO, AND LECTURER ON ANATOMY AT, ST. THOMAS'S HOSPITAL.

THERE are some points in the meteorology of a district that are of practical importance to the medical practitioner and to his patients. In the present day there is no doubt that many invalids are compelled to choose a place of residence where the climate and the weather are likely to be suitable to them. Most places have some local recorder of the weather, and it is satisfactory to notice that many of these are active or retired medical men, who by their scientific training are peculiarly adapted for carefully recording the changes of the weather and the peculiarity of the neighbourhood in its meteorology as suitable for certain classes of invalids. In most instances we have no difficulty in obtaining records of the temperature and of the total rainfall. But what I am here anxious to call attention to is the advisability of keeping a record of the day and night rain separately as indicating what a visitor may expect in the hours when he is likely to be out of doors. Supposing we had the means of comparing such a record of day and night rain for different places where invalids might possibly go I think we should have something useful both for them and for the medical man who recommends them to get away. A purely scientific record of rainfall from sunrise to sunset or from any one hour in the morning to a similar hour in the evening, or even hourly records taken, as they are now, by self-recording instruments, unless laboriously tabulated would not be of the same practical value for the medical man or his patients as the plan I wish to recommend. The invalid or the health-seeker wants to know simply what chances there are of his being able to get out when there is a chance of the sun shining in our eccentric climate. If some such series of records could be put together for reference by members of the medical profession it would undoubtedly be a great advantage. And I here submit my contribution to such a series in the hope that it may incite others who have the opportunity to add to it.

Having completed ten years of residence here at Sevenoaks I have thought it might be useful to summarise the results of observing the rainfall so as to give (1) the average monthly rainfall, together with the maximum and minimum; and (2) the difference between the day and night rain for that period, showing this by means of a table of percentages. I will first give the record of rainfall for each month in the years 1884 to 1893 inclusive in the following table, in which

RAINFALL FOR TEN YEARS IN INCHES.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1884	2·48	1·95	1·93	1·63	0·74	1·64	1·93	0·95	4·97	1·74	0·82	3·80	24·56
1885	2·12	3·03	1·65	2·50	3·88	1·29	0·25	1·15	4·73	4·32	2·85	1·76	29·68
1886	3·21	0·58	1·66	2·17	4·08	0·54	2·77	1·64	2·50	2·77	4·24	4·28	30·44
1887	2·89	0·82	1·68	2·43	2·00	1·26	0·99	2·62	2·38	2·22	4·73	2·10	25·82
1888	0·72	1·80	4·69	2·16	1·19	5·92	5·31	3·31	1·59	1·70	4·96	2·20	35·45
1889	1·22	3·23	2·54	3·20	3·00	1·90	2·60	2·65	1·55	6·10	1·56	2·19	31·74
1890	3·75	1·21	3·14	2·70	1·73	2·25	5·46	3·95	0·72	1·37	3·53	0·56	30·37
1891	3·34	—	2·19	0·72	3·76	1·84	4·52	4·51	1·69	7·70	2·98	4·36	37·61
1892	0·86	1·65	2·07	2·07	1·17	5·40	2·55	3·98	2·82	5·94	4·16	2·67	35·34
1893	2·80	4·33	0·73	0·01	0·46	0·77	3·22	1·07	1·91	4·86	3·19	2·92	26·27
Average for ten years	2·34	1·83	2·22	1·96	2·20	2·28	2·96	2·67	2·49	3·87	3·30	2·68	30·70
Average rainfall from Jan. 1st	2·34	4·17	6·39	8·35	10·55	12·83	15·79	18·36	20·85	24·72	28·02	30·70	—

Greatest monthly fall recorded October, 1891, 7·70 inches. Least monthly fall recorded February, 1891, *nil*.
Greatest on any one day, June 28th, 1892, 2·63 inches.

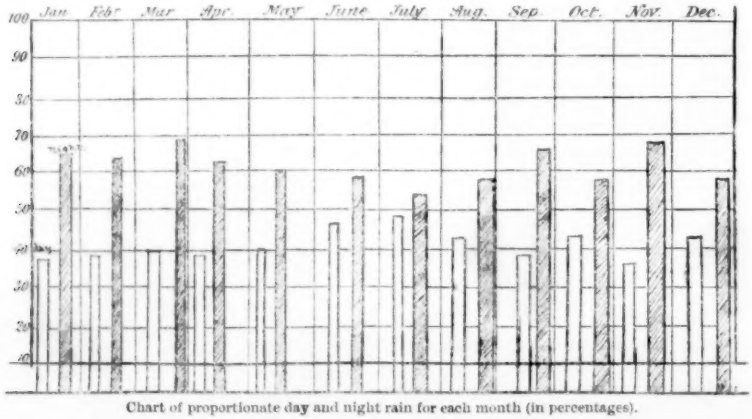


Chart of proportionate day and night rain for each month (in percentages).

will be found also the average for each month, the accumulated average rainfall from Jan. 1st, the greatest monthly fall recorded, the least monthly fall, and the greatest on any one day.

In giving the day and night rain especially I have been guided by the desire to see what an invalid's day and night would show in the difference of rainfall and so have followed an entirely different plan from that which I see has been adopted by Mr. Symons and others in a paper on "British Rainfall, 1895," on the Relative Fall of Rain during the Day and during the Night. In that paper the time taken for the day is 9 A.M. to 9 P.M. In my own case I have taken the invalid's day to be from 10 A.M. to sunset. This appears to me to be of more practical importance than the other method.

It may be difficult to make any comparison between the two sets of observations, but I submit the accompanying results to notice in the hope that they may prove of some interest. Now, taking the day and night rain for this period, and keeping to what I have already described as the invalid's day, I find that the percentage of rain which fell in the day compared with that which fell at night is represented by the following figures:—

	Day.	Night.		Day.	Night.
January	37	63	August	42	58
February	39	61	September	37	63
March	35	65	October	42	58
April	38	62	November	35	65
May	40	60	December	41	59
June	43	57			
July	48	52	Average ...	40	60

This is shown more clearly by the chart on the preceding page.

Looking over these tables it will be seen that although the proportion per cent. is 40 for the day and 60 for the night for the whole year, it is from 35 to 65 in March and November, whereas it is only 48 to 52 in July. Moreover, the day rain exceeds 40 per cent. in from June to August inclusive and also in the months of October and December. The peculiarity of this excess of day rain in these particular months shows that it cannot be accounted for simply by the fact of the days being longer at these times, for this was evidently not the case in all these months. It is possible that the large amount of rainfall during the day in the three summer months may be accounted for by the presence of thunder-storms.

I submit next a table showing the average number of days and nights in each month on which an appreciable amount of rain fell (+ 0·01):—

	Day.	Night.		Day.	Night.
January	8	11	July	9	8
February	6	9	August	8	9
March	7	10	September	7	9
April	7	8	October	11	12
May	8	8	November	10	14
June	5	8	December	8	12

By this it will be seen that the showers on wet nights exceed the showers on wet days in all the months except July, that the largest number of wet days will be found in October and November, and the largest number of wet nights in October, November, December, and January. Dividing the year into four seasons, as already has been done in the paper referred to, and taking 100 for the day rainfall, we arrive at the following results for the invalid's day and night:—

	Day.	Night.
Winter (November to March)	100	... 170
Spring (April to May)	100	... 156
Summer (June, July, and August) ...	100	... 127
Autumn (September and October) ...	100	... 156

So that we may say that the average is 100 for day and 150 for night.

We may, therefore, summarise the above remarks by saying—(1) in winter the nights are much wetter than the days; (2) in spring and autumn the nights are also wetter than the days, but the difference is rather less marked; and (3) in summer the excess of rain at night is much less marked than in the other periods.

Sevenoaks.

METROPOLITAN CONVALESCENT INSTITUTION.—An anonymous donor has given £1000 to the Metropolitan Convalescent Institution, and has arranged that a number of admission orders for the Walton and Broadstairs homes shall be at the disposal of the directors of the Gas Light and Coke Company and the South Metropolitan Gas Company for the use of their employés.

ON THE SERO-DIAGNOSIS OF TYPHOID FEVER.

BY FERNAND WIDAL, M.D.,
PROFESSOR AGRÉGÉ AT THE FACULTY OF MEDICINE OF PARIS AND PHYSICIAN OF THE PARIS HOSPITALS.

ON June 26th last I brought before the Medical Society of the Paris Hospitals a new method—to which I gave the term "sero-diagnosis"—by which typhoid fever could be recognised almost instantaneously by simply observing microscopically how the serum of a patient acted on a culture of Eberth's bacillus. I described several processes to establish the sero-diagnosis, some being slow and others rapid. Among the slow processes one consisted in adding a few drops of serum to a culture of Eberth's bacillus in bouillon already cloudy, and observing a few hours later whether the bouillon became clear again and if, at the same time, a precipitate was formed at the bottom of the tube. The other process consisted in adding to a tube of fresh bouillon a few drops of serum, then introducing into it a trace of a culture of Eberth's bacillus, and placing the tube in an oven at a temperature of 37° C., and observing whether after fifteen or twenty-four hours a precipitate had formed at the bottom of the tube, showing under the microscope heaps of microbes, leaving the bouillon almost completely clear. I very particularly indicated that this latter process could only be adopted if one used a rigorously aseptic serum.

For ordinary daily practice I prefer the improvised process. I have shown that all that was necessary was to add a drop of serum or even a drop of blood taken from the tip of the finger of the patient to ten drops of a young culture in bouillon of typhoid fever bacilli, and to see almost immediately under the microscope the formation of "heaps" or agglomerations of bacilli, which often allows an almost instantaneous diagnosis of typhoid fever to be made. I ended my first communication by saying: "Here is a simple and rapid process which can be employed by everyone, necessitating no laboratory material. All that is necessary is to have at one's disposal pure cultures of Eberth's bacillus, a microscope, and a few drops of serum or even only one drop of the blood of a patient."

On July 23rd and 31st at the Medical Society of the Paris Hospitals, on July 29th in the *Presse Médicale*, and on Aug. 6th at the Medical Congress of Nancy I took up this question alone and in collaboration with M. Sicard. We have shown that the reaction could be produced instantaneously if a pure culture of Eberth's bacillus on gelatin is diluted with pure bouillon and the suspected serum is immediately added. We have indicated that the reaction could be obtained with dried serum or dried blood coming from patients suffering from typhoid fever. We have also shown that a practitioner could in full security send to a laboratory to be examined by the improvised process the blood of a patient suspected to be suffering from typhoid fever contained in a closed tube, like one does for diphtheritic membrane or a suspected tuberculous sputum. We have also studied the agglutinating reaction of the different fluids of the body in typhoid patients.

The agglutination of the microbes by the serum of immunised animals has been under consideration since 1889. As regards the infection of typhoid fever, we have stated previously that Pfeiffer and Koll[1] had shown that the serum of animals rendered immune against the infection of typhoid fever as well as the serum of convalescents from typhoid fever, injected into the peritoneal cavity of a guinea-pig at the same time as a culture of Eberth's bacillus, possessed the property of rapidly immobilising, of agglutinating, and deforming the microbes present in the serous cavity. We also mentioned that Durham and Grüber[2] had previously shown that the serum of

[1] Pfeiffer and Koll: Ueber die Specifische Immunitätsreaction der Typhusbacillen.—Zeitschrift für Hygiene, 1896, Band 21, Heft 2, p. 203. Zur Differentialdiagnose der Typhusbacillen vermittels Serums der gegen Typhus immunisirten Thiere.—Deutsche Medicinische Wochenschrift, March 19th, 1896, p. 185.

[2] Durham: Proceedings of the Royal Society, vol. lix., Jan. 3rd, 1896. Grüber: Active und Passive Immunität gegen Cholera und Typhus, &c.—Wiener Klinische Wochenschrift, 1896, Nos. 11 and 12, pp. 183 and 201. Grüber and Durham: Eine neue Methode zur Raschen Erkennungen des Choleravibrio und des Typhusbacillus.—Münchener Medicinische Wochenschrift, March 31st, 1896, p. 285.

animals rendered immune against experimental typhoidal infection had the power of immobilising and uniting in heaps or masses *in vitro* Eberth's bacilli in suspension in a liquid. Up to June 26th, 1896, the date of my first communication, the phenomenon of agglutination had been considered as a "reaction of immunity" appearing only in immunised animals. I was the first to show that it was indeed a "reaction of infection," that it appeared in man during the first days of the disease, and I thus arrived at the conception of sero-diagnosis and its applications. A few days after my first communication, confirmative facts were presented by different clinicians and to-day some hundreds of observations of positive sero-diagnosis have already been published in Europe and America. Up to the present date my improvised process has almost always been preferred by experimenters. It is this same process which M. Achard and M. Bensaude[3] have employed for the sero-diagnosis of Asiatic cholera. I was, therefore, very much surprised to find an article on the Agglutinative Action of the Human Serum for the Diagnosis of Enteric Fever, published in THE LANCET of Sept. 19th last—that is, nearly three months after my first publication—by Dr. Grünbaum, who proposes a much more complicated process than my extemporaneous method, and only adds at the end of his article, as history of sero-diagnosis, the following: "Whilst this work was in progress a short communication by Widal applying a similar method macroscopically has been published in the *Semaine Médicale*. It requires, however, a large quantity of blood and a longer time and, apparently from the rather meagre description, a final resort to the microscope." If for a purely technical question Dr. Grünbaum, instead of being contented with an incomplete analysis given by a paper, had referred to the official text of my researches or to the *Presse Médicale*, which reproduced *in extenso* most of my works, he would have seen that I did not publish a *short communication* on the sero-diagnosis, but that since June 26th last I have published a series of articles on this subject, and that my favourite method is based only on microscopical examination, is extemporaneous and only necessitates a minimum quantity of blood. Dr. Grünbaum would have avoided an error which I desire to correct.[4]

Paris.

A CASE OF CHOLECYSTECTOMY; RECOVERY.[1]

BY H. W. SHETTLE, M.R.C.S. ENG., L.R.C.P. EDIN.,
SURGEON TO THE ROYAL SOUTH HANTS INFIRMARY;
AND
L. M. BRETON, M.R.C.S. ENG., L.R.C.P. LOND., L.S.A

IN August last we saw the patient from whom the stone exhibited was removed in consultation and agreed that the only chance of her living or dying with any degree of comfort lay in operation. Accordingly cholecystectomy was performed by Mr. Shettle on Aug. 13th. The following history and notes of the case have been written by Mr. Breton, who assisted at the operation.

For twenty years the patient, aged fifty-two years, had been subject to recurring attacks of severe abdominal pain, coming on suddenly and generally accompanied by vomiting. There were at first intervals of three or four years between these attacks until the last eighteen months, during which six attacks have occurred. She was now never free from a constant, dull, aching pain in the situation of the gall-bladder. She stated that she had never been jaundiced. When called in to see her on June 30th last I found her suffering from intense abdominal pain; she had vomited twice, her skin was cold and moist, and the pulse small and rapid. The acuteness of the pain passed off in a few hours, and on the two days following twelve or more gall-stones were passed varying in size from nearly that of a hazel nut to that of a split pea. After a few days the patient got about the house as before, but complained very much of constant aching pain and expressed herself willing to undergo any treatment which could hold out prospect of permanent relief. Thinking that the mischief was most probably confined to the gall-bladder or cystic duct (from the fact that the attacks had never been followed by jaundice), I thought that the case was one favourable for the operation of cholecystectomy. The operation was performed on Aug. 13th.

Remarks by Mr. SHETTLE.—The ordinary incision having been made and the peritoneal cavity opened the gall-bladder was found to be filled with what appeared to be one large stone. There was no fluid in the bladder, which was in close contact with its contents. Bearing in mind the excellent results of inguinal colotomy where a glass rod is used and only a couple of deep sutures instead of the old and more elaborate stitching, I determined on trying a somewhat similar mode of operation in this case. Accordingly, the pear-shaped tumour was drawn forward through the abdominal wound and used as a wedge. I then passed deep sutures, including the peritoneum, through the abdominal wall, the one above and the other below the apex of the pear. A few more stitches completed the first stage of the operation. On Aug. 17th I removed the stone and its adherent bladder: its weight was five drachms, and it measured two and a quarter inches in length and one and one-eighth of an inch in width. Some small pieces were broken off in extraction, and on clearing these away and passing a probe into the duct no other stone could be felt. It appears to me that in any case where the gall-bladder is fully and firmly distended—as in the present case—this operation is to be preferred to the more complicated one with its innumerable sutures in the gall-bladder, which are always difficult to pass accurately. After the operation the patient had two drawbacks during convalescence—one cystitis, and the other phlebitis in the left leg, both of which yielded to treatment. She now expresses herself absolutely free from the old intolerable pain. She is at present in good health and spirits and able to take short walks.

Southampton.

SULPHONAL POISONING IN A CASE OF MELANCHOLIA AGITANS.

BY F. P. HEARDER, M.B., C.M. EDIN.,
ASSISTANT MEDICAL OFFICER TO THE WEST RIDING ASYLUM, WAKEFIELD.

A MAN forty-three years of age, single, of steady habits and with a good family history, four months previously to his admission on May 2nd, 1896, to the Wakefield Asylum had hurt the back of his head in an accident; he suffered much from shock and "had been very nervous since." Three weeks before his admission he cut his throat. His physical state on admission was as follows. His height was 4 ft. 10 in., and his weight 8 st. 8 lb. He was fairly well nourished. He had a cut across the front of his throat one and a half inches in length, opening into the trachea and healing by granulations. When he spoke a peculiar buzzing and whistling sound was produced by the air escaping through this opening. His hair was black and his complexion was sallow. The pupils were unequal, the right being more dilated than the left; the left pupil reacted more perfectly. His knee-jerks were exaggerated and there was slight ankle clonus. His superficial arteries were thickened and tortuous; the heart's action was irritable and irregular, and the sounds were accentuated, but there was no bruit. In the urine there was a copious mucous cloud; it was acid, of specific gravity 1022, and contained no albumin or sugar. His mental state on admission was that of agitated or motor melancholia. He had a dejected and lacrymose expression and he had aural and visual hallucinations and delusions that harm (murder, &c.) was

[3] Achard and Bensaude: Sero-diagnostic du Choléra Asiatique chez l'Homme. Presse Médicale, Sept. 26th, 1896.

[4] I may add that in collaboration with M. Sicard I brought forward on Sept. 29th at the Paris Academy of Medicine, and on Oct. 9th and 16th at the Medical Society of the Paris Hospitals, new researches on sero-diagnosis and experimental and chemical researches on the agglutinative phenomenon which are too long to be considered here. I may also add that at present we have practised sero-diagnosis in forty-five serious as well as mild cases of typhoid fever during its acute stage, and that we have searched for, without finding it, the agglutinative reaction in the blood of more than 200 individuals in good health or suffering from other diseases, by mixing the serum and culture of Eberth's bacillus in the proportions which I have indicated. The different authors who have controlled my researches have arrived at the same results.

[1] Extract from a paper read before the Southampton Medical Society on Nov. 3rd, 1896.

happening to his mother and sister; he cried and prayed for their safety. During the next few days he continued restless, sleepless, needed forcible feeding, and was constantly attempting to tear the bandage off his throat, requiring continual supervision. A mixture of bromide of potassium with chloral hydrate was exhibited with no good effect. Sulphonal was then tried (fifteen grains three times a day) administered in a warm drink, apparently with marked good effect, as he took his food better, slept well at night, and was less restless during the day. On the fourth day his gait was ataxic and his expression and movements were "drunken." On the sixth day the urine—which, as is usual in patients taking sulphonal, was being carefully watched—was noticed to be becoming scanty and highly coloured. The sulphonal administration was at once stopped and the urine examined. It contained no blood and no albumin. On the following day there was marked oliguria, about five ounces of urine being passed in the twenty-four hours. The urine was of about the colour of porter which had been shaken; there was no deposit, it was acid, and of specific gravity 1015. The amount of albumin was exceedingly copious, the urine on being boiled becoming almost solid. The patient was in a somewhat soporose state; there was slight œdema of the eyelids, but no swelling of the legs and ankles. The pulse was quiet and the temperature about normal. He was kept recumbent and a saline purge was administered, a diuretic mixture containing citrate of potassium and acetate of potassium being given, with diluent drinks, milk and soda-water, and barley-water. On the following day the urine was still somewhat scanty, highly coloured, acid, and of specific gravity 1020, but it contained no blood or albumin. The patient was better and took food (fluid and semi-solid) freely. Since then he has made considerable physical and mental improvement, but continues depressed. Several subsequent examinations of his urine have revealed nothing abnormal.

With the exception of a few cases of post-influenzal debility where single doses of sulphonal have been followed by toxic effects, all cases of sulphonal poisoning have been after long-continued use of the drug, the symptoms usually being lethargy, giddiness with digestive disturbances, anorexia, constipation, occasionally diarrhœa and vomiting, and hæmatoporphyrinuria. A German observer has also noted ischuria, oliguria, and sometimes albuminuria. Professor Stokvis, experimentally administering sulphonal to dogs and rabbits, found "it was only when the drug was pushed to a fatal termination that albumin appeared during the last days of life."[1] In the above case the dose was comparatively small and the toxic effects acute. It is a good example of the necessity of training attendants and nurses to note the urine of every patient taking sulphonal.

Wakefield.

THE TREATMENT OF BURNS, GRANULATING WOUNDS, AND SKIN-GRAFTS BY THE ANTISEPTIC CAGE.

By J. R. BENSON, M.R.C.S., L.R.C.P.,
HOUSE SURGEON TO KING'S COLLEGE HOSPITAL.

I WAS very much struck by the painfulness of dressing, and the difficulty of rendering aseptic, burns and large granulating surface wounds generally. They necessarily must be frequently dressed, and each time the pain to be endured is very considerable. What lotion to use is also a difficult question to decide, especially when the raw surface is a large one. Among the disadvantages of the ordinary method of dressing a wound such as that under consideration one especially notices the following, which are all more or less overcome by the method I am about to describe. 1. The lotion is absorbed and causes local or general symptoms. 2. The dressings must for safety sake be put on wet and consequently act as a poultice does in rendering the part sodden and the granulations œdematous and unhealthy. 3. The discharges are retained and form an excellent medium for the growth and increase of organisms. 4. The vitality or resisting power of the part is lowered by the drugs used. This seems to be undoubtedly the case, as of wounds left open from the first it is surprising how few become septic, whereas of wounds carefully dressed at first and accidentally left exposed it is remarkable how few escape. 5. The dressings adhere to the young superficial cells, which are torn off when they are removed. To avoid these drawbacks I have, with Mr. Barrow's permission, adopted the plan of treating all large surface wounds with an antiseptic cage dressing. The principle is to have a current of dry, pure air constantly passing over the wound, and also to have any discharges drained or washed off almost as soon as they are formed. The way to secure these objects is simple. A cage of some description is placed over the wound and the dressings are applied outside this cage. The easiest way to make the cage for an extremity is as follows. A piece of tin is cut so that there is a splint for the limb to rest on and a sufficient number of long, narrow processes projecting at the sides. These processes are bent up over the part to form a cage which encloses the limb, the splint being attached by strapping above and below the wound. Of course, if there is a large body wound ordinary wire cradles will do with antiseptic towels. For small body wounds the best way is to get two pieces of glass tubing and fix them with strapping to the skin and stretch gauze over them. I have used this plan with success for skin-grafting of breasts. However, very little ingenuity is necessary to make a cage over any wound. If this method is adopted the wound can be easily dressed by merely lifting the gauze off the cradle and douching with a weak lotion. The granulations—previously œdematous—become small, red, and firm, the discharge ceases entirely, the wound becomes dry, and healing is uninterrupted.

For the operation of skin-grafting this dressing is especially useful both for preparation and for after-treatment. The grafts are cut from a purified surface and put on the prepared wound. Protective is placed over them and pressure applied in the ordinary way. This is left for some five or six hours—not too long or the protective becomes adherent to the grafts and they may be dragged off. If pressure, on the other hand, is applied for too short a time serum is poured out between the wound and the grafts. After five or six hours the wound is undressed and put up in the antiseptic cage. Once there the grafts can be carefully watched and once or twice a day douched with some weak lotion. I use a 1 in 2000 perchloride of mercury solution. The dull bluish white of the grafts soon gives way to a delicate pink and there is no scabbing. Septic organisms having no retained discharges to thrive in are not likely to spoil the result. The process is so simple and the results so good that skin-grafting, instead of being a delicate and uncertain operation, becomes a certain and tolerably easy one. At all events, I have had several cases, and some difficult ones, and have not yet had a failure since I used the antiseptic cage.

[1] Journal of Mental Science, October, 1896.

ON THE INTERNAL ADMINISTRATION OF GUAIACOL AND CREOSOTE IN PHTHISIS PULMONALIS.

By DR. R. SEIFERT.

I READ with much interest the paper by Dr. F. R. Walters on Antisepsis and Elimination in Pulmonary Phthisis which appeared in THE LANCET of Aug. 8th, 1896. Dr. Walters assigns much value to experiments by Poggi, which are supposed to show that no more than from 15 to 20 minims of guaiacol can be absorbed per diem by the alimentary canal. I have not read Poggi's paper, and am not, therefore, in a position to judge whether his experiments were correctly carried out or not; but I can affirm that his conclusion is wrong—viz., that it is impossible to introduce more than 20 minims of guaiacol per diem into the blood. Very careful experiments have been made on this subject of late years in the laboratories of some German universities, the latest being Dr. Eschle's "Beiträge zum Studium der Resorptions- und Ausscheidungs-verhältnisse des Guajakols und Guajakolcarbonats."[1] Dr. Eschle himself took during three days 8·1 grammes (124 grains = 240 minims) of carbonate of guaiacol, and extracted from the urine passed on these days 4·2 grammes (65 grains = 125 minims) of guaiacol.

[1] Zeitschrift für Klinische Medicin, Band xxix., Hefte 3 und 4.

Since guaiacol derived from the carbonate in the alimentary canal is excreted partly by the kidneys and partly by the skin and the lungs and is partly destroyed by oxidation in the blood it is certain that there had been absorbed much more than 125 minims in three days, or 42 minims per diem. In other similar experiments by Dr. Eschle much larger quantities of guaiacol were absorbed. He showed that the guaiacol excreted by the urine is partly combined with sulphuric acid and partly with glycuronic acid, in the proportion of 23 to 28. During a period of four days he took 22 grammes (338 grains) of carbonate of guaiacol and found that 5·9 grammes (88·5 grains) of pure guaiacol combined with sulphuric acid were excreted, whilst $\frac{5 \cdot 9}{23} \times 25 = 7 \cdot 2$ grammes (108 grains) were combined with glycuronic acid. Hence by the urine alone 13 grammes (295 grains = 390 minims) of guaiacol had been excreted during four days. Allowing further for that excreted by the lungs, &c., it follows that at least 100 minims of guaiacol, derived from the carbonate, had been daily absorbed from the alimentary canal.

It is probable that the amount of creosote that can be absorbed from the alimentary canal from "creosotal" (carbonate of creosote) is considerably larger, as this latter is taken in much larger doses (from one-half to two teaspoonfuls). Poggi's observations are, therefore, erroneous or they do not apply to the carbonates of guaiacol and creosote, for by means of these preparations we succeed in passing into the blood doses so large "as would formerly have been thought impossible," to use the words of the late Professor Dujardin-Beaumetz of Paris. To introduce large doses of creosote or guaiacol we are therefore not compelled to employ hypodermic injections, but can make use of the much simpler, much more agreeable, and much less dangerous method, by the mouth.

There is another point which deserves attention in Dr. Walters' paper. He says: "A medical friend tells me that one of his patients—not a tuberculous one—took creosote by the teaspoonful without any ill effect whatever. On the other hand, a case is on record of death from 18 minims. This must have been due to impurity of the drug or to idiosyncrasy." This view is one which is fairly widely held in medical circles. But the real cause of creosote intoxication is not to be sought in impurity of the drug or in idiosyncrasy, but in the creosote itself. Chemistry teaches that creosote, even the best quality, is a substance very closely related in composition to carbolic acid, and that consequently it has analogous properties. Creosote, precisely like carbolic acid, is a strong corrosive, coagulating albumin. On the tongue creosote causes the same burning and corrosive sensation as does concentrated carbolic acid. Even in solution creosote has a markedly caustic action on the gastric mucous membrane. Under particular circumstances (an empty stomach, &c.) creosote may readily act as a corrosive and death ensue from gastro-enteritis. There are such cases recorded by Bourget, Frankel, Zawadski, and Frendenberg, and quite recently in Professor von Ziemssen's "Annalen der Allgemeinen Städtischen Krankenhäuser zu München," 1896, p. 289. Under the title "Zur Therapie der Lungenphthisie" in Ziemssen's "Annalen" we read: "Before discussing the manner of administration and the action of two preparations much recommended of late as remedies in pulmonary phthisis we may first take a brief survey of former methods of treatment in our hospitals. The trial of arsenical treatment often made in 1890 led to no particular results. At the end of 1890 and the beginning of 1891 nineteen cases of pulmonary phthisis were treated with the tuberculinum Kochii, with the result that in two patients an increase of weight was noted, but no change in the local condition could ever be determined. Thus it happened that creosote, employed in medical treatment since the end of the 'eighties,' again came to the front; it was prescribed in pills—0·05, 0·1, and 0·15 grammes (0·75, 1·5, and 2·25 grains)—or in capsules (0·1–0·2 gramme = 1·5–2·25 grains), together with fresh air and good nourishment. Very often the creosote caused bad after-effects in the stomach. In two phthisical patients acute gastritis (swelling of mucosa, punctate haemorrhages, and small erosions) was found post mortem and was attributed to the creosote. On account of this gastric derangement creosote could not be taken long enough to yield any noteworthy results, yet in cases of apex catarrh even a brief administration of the drug was followed by retrogression of the catarrhal signs. At the present time tuberculosis is treated in our hospitals by the administration of 'creosotal' (carbonate of creosote) and carbonate of guaiacol. At first the dose of 'creosotal' is half a teaspoonful per diem, given in milk, claret, or bouillon, according to the taste of the patient. If no distaste or digestive trouble ensue the dose is slowly increased to three teaspoonfuls per diem. In about 10 per cent. of the cases it was either not possible to attain this dose, or we were obliged, after daily doses of three teaspoonfuls had been taken for three or four weeks without any ill effects to reduce this to a half-teaspoonful two or three times a day, or to discontinue the drug entirely. In the more advanced cases with much gastric disturbance the remedy could not be tolerated. As regards the effect of carbonate of creosote, it was ascertained that in cases of infiltration of the apex with trifling shortening of the percussion note and fine vesicular rales and feeble breathing or prolonged expiration there was soon observed an increase of appetite, improvement of nutrition, and an increase of weight, and very soon, often after three or four weeks, a clearing (lowering) of the percussion note, disappearance of crepitations and diminution of cough and expectoration. A similarly favourable influence on the progress of the disease by the continued administration of 'creosotal' for two or three months was recorded in cases where distinct infiltrations of one apex with bronchial breathing had already occurred. However, although owing to occasional unfavourable action on the stomach the administration of carbonate of creosote is to a certain degree limited we have in carbonate of guaiacol a remedy which, being tasteless and without odour and irritating action on the gastric mucous membrane is tolerated in all but the rarest cases. The carbonate of guaiacol is a white crystalline powder, perfectly inodorous and tasteless, non-corrosive—properties which have secured for it the position it occupies amongst the creosote and guaiacol preparations. We administer carbonate of guaiacol in powders of 0·5 grammes (7 grains) in wafers, increasing the dose every three or four days up to 3 or 4 grammes (45 to 68 grains) per diem. It cannot be denied that here also at first some patients complain that the powders 'lie heavy on the stomach,' but in spite of this we succeed in continuing their administration and very gradually reach the larger dosage. The effect of the carbonate of guaiacol resembles that of the carbonate of creosote. In cases of apex catarrh a rapid cure was invariably found; in cases of infiltration there was an improvement of the general health, of nutrition, and of strength, with decrease of cough and expectoration. In five cases with high fever the disease retrograded."

Guaiacol is, as is well-known, the chief constituent of good creosote. It would, therefore, be hardly necessary to mention that guaiacol, like creosote, has toxic and corrosive properties, had not Dr. Eschle, in his above-mentioned article, made some especially interesting observations on the toxic action of guaiacol. In the *Berliner Klinische Wochenschrift* for 1891 Dr. Holscher pointed out the non-virulence of carbonate of guaiacol. He gave a dog only a few months old for several days from 10 to 20 grammes (from 150 to 300 grains = 360 to 600 minims) of carbonate of guaiacol without any ill effects to the health of the animal. Dr. Eschle gave a strong young dog, 6 kilogrammes in weight, on three consecutive days 3 grammes (45 grains = 90 minims) of guaiacol, *not* carbonate of guaiacol. "The dog showed want of appetite, hid himself in a corner of his cage, and looked very miserable. ..... A further striking result was the fact that the greenish black urine yielded with hydrochloric acid a voluminous flocculent precipitate, shrinking to a glutinous mass which prevented filtration. We failed to determine the nature of this substance, although the precipitate invariably recurred with every administration of guaiacol, and a large amount of urine was thus at our disposal. Examination of this precipitate showed that it was combustible and did not react to the usual tests for albumin; it contained abundant nitrogen, gave a marked Millon's and biuret reaction, and did not reduce alkaline solution of copper." The carbonate of guaiacol, even in doses of more that 6 grammes (90 grains) never produced a urine like this. Dr. Eschle therefore says at the close of his exhaustive paper: "After large doses of guaiacol (not carbonate of guaiacol) an organic substance, not yet definable, appears in the urine, precipitated in tough glutinous flakes by hydrochloric acid; it may possibly cause blockage of the tubuli uriniferi with suppression of the renal function, and therefore seriously injure the system."

I believe we are justified in going farther than Dr. Walters,

who mentioned carbonate of guaiacol and carbonate of creosote as "useful alternatives" for creosote and guaiacol. I believe, rather, that in every case instead of the toxic and corrosive creosote and guaiacol the non-toxic and non-corrosive carbonate of creosote and carbonate of guaiacol should be given. Professor Dujardin-Beaumetz, in his "Dictionnaire de Thérapeutique," 1895, says: "Creosote is recognised as the most efficient agent we possess for the treatment of tuberculosis, but being caustic it can only be given in small doses. This objection does not hold for 'creosotal' and carbonate of guaiacol. The creosote in it is in such combination that doses formerly believed impossible can be administered, hence their administration constitutes a most important advance in the treatment of tuberculosis. As creosote is not better borne in any other form 'creosotal' and carbonate of guaiacol are to be preferred in all repects in the treatment of phthisical cases."

Dresden.

GANGRENE COMPLICATING PUERPERAL MANIA.

BY E. R. ROUSE, M.R.C.S. ENG., L.R.C.P. LOND.,
ASSISTANT MEDICAL OFFICER, LONDON COUNTY ASYLUM, COLNEY HATCH.

ALTHOUGH puerperal mania is one of the commonest forms of insanity admitted to our asylums gangrene as a complication is almost unheard of. Taking the records of our cases for the last ten years there is not a case quoted, and this alone, I think, is fairly conclusive evidence considering the great number of female admissions we have suffering from puerperal mania every year. The two following cases, coming as they did within a week of each other, coupled with their rarity and ultimate recovery, are, I think, worthy of record.

CASE 1.—A woman aged thirty-one years was admitted on Jan. 10th, 1896, in a condition of acute mania the result of her confinement two weeks previously. It was her first child and the labour had been (as far as could be gathered) quite natural. On admission her mental symptoms were of a most severe nature; she was extremely restless and noisy, constantly shouting in an incoherent manner, and having very little sleep without the aid of narcotics. There was no hereditary history to be made out and she appeared to have been free from illness. Her physical state presented nothing abnormal and she was well nourished. She remained in a state of acute excitement for about a week, when her symptoms abated considerably. She, however, now complained of great pain in her feet and fingers, which on examination were quite white, cold, and anæsthetic. Hot bottles were applied and the limbs were elevated and wrapped in several layers of cotton-wool. On the following morning the toes of both feet and the fingers of one hand and the right ear were, it was evident, in a condition of gangrene, and the case simulated very closely one of Raynaud's disease. Excepting for a slight elevation of temperature (99° F.) she seemed fairly well in herself; there was no albumin or sugar in her urine and nothing physically to be made out. On questioning the patient she stated, however, that she had a slight vaginal discharge which smelt very offensive and which had only just appeared, the lochia having ceased before admission (which, however, I should think was doubtful). The gangrene in the feet slowly but surely advanced, clearing up, however, entirely in her fingers and right ear. Her temperature, particularly in the evening, now was elevated, reaching sometimes 102°, and she was becoming somewhat thinner, being unable to take much nourishment and suffering severe pain. A good nourishing diet was ordered, opium was given to relieve the pain, and the vagina was constantly syringed with permanganate of potash and warm water. In spite of all treatment the case progressed unfavourably and she had now many signs of septic poisoning. Her condition becoming serious amputation of both legs was proposed to the friends, who consented to the operation being done. With the assistance of my colleague, Mr. Robinson, we removed both feet, a modified circular flap method being done in the lower third of the right leg and Syme's amputation in the left. She bore the anæsthetic well, and on the evening of the operation, though complaining of some pain, appeared fairly comfortable, her temperature being 99°. She progressed favourably for about three days, when the temperature reached 101°, and it was considered advisable to re-dress the stump. This was done, and unfortunately in both stumps a localised patch of recurrent gangrene about the size of a shilling had presented itself. The wound was thoroughly cleansed with perchloride of mercury and dressed with iodoform powder, double cyanide gauze, and wool. After this the case progressed favourably, the patches slowly separating and the wound healing by granulation at these spots. On March 16th she was measured for false feet and on April 17th, about three months after her admission, she was discharged recovered. Since her discharge I learn that mentally she is quite well and with slight assistance is able to get about her daily duties.

CASE 2.—This case, although simulating the first in many points, was more serious from the onset, the patient's mental state being extremely bad, and this, coupled with a more feeble constitution, left her in a very exhausted condition. The patient was aged thirty-seven years and the mother of five children, the last of whom was born three months previously to her admission to the asylum on Jan. 29th, 1896. She was in an acutely maniacal state (this was her second attack); there was no hereditary history obtainable, and her physical condition, excepting a slight bronchial catarrh, was normal. She had had one miscarriage. Her condition remained, as regards her mental state, very unsatisfactory, and on Feb. 12th, about a fortnight after admission, her right foot and the anterior surface of her right leg appeared quite cold and of a dark ashen colour; at the same time the patient complained of severe pain. Peculiarly enough, as in the first case, her mental symptoms now greatly improved. The limb was treated in exactly the same manner as in Case 1 and a nourishing diet ordered with a mixture containing carbonate of ammonia and cinchona. In spite of all treatment the gangrene advanced, and much more rapidly than in the first case, and as it was quite evident she would be quite unable to cope with any long suppuration, owing to her exhausted condition, amputation was advised as soon as a line of demarcation appeared. The disease extended to just below the knee, running higher, however, on the outside than the inside of the limb. The leg was removed on Feb. 26th in the lower third of the thigh. The patient took the anæsthetic fairly well, but was extremely exhausted on the evening of the operation, her temperature advancing to 100·4° F. She had an injection of morphia that night and slept fairly well. For some few days the patient remained in a most precarious state, having a very high temperature and being extremely exhausted. Owing to her continuing in this state and fearing septic poisoning the stump was dressed and, as in the other case, a large localised patch of recurrent gangrene presented. The wound was thoroughly cleansed with carbolic lotion and dressed as in the other case. She about this time took a turn for the better and the recurrent gangrene sloughed away, and after a considerable period the wound thoroughly healed by granulation. The patient slowly gained strength, and though her mental state has relapsed again she is in very fair bodily health and recently has been measured for an artificial limb.

My best thanks are due to Dr. Mott, who very kindly dissected the limb and cut sections of the vessels, and was able to determine in this last case the exact condition of the arteries and veins. He found that venous thrombosis was the chief cause, coupled with endarteritis of the larger arteries. Unfortunately we were unable to determine the cause microscopically in the first case, but Dr. Mott gave it as his opinion that stasis in the vessels was the most probable explanation.

Colney Hatch Asylum, New Southgate.

ST. MUNGO'S COLLEGE MEDICAL SOCIETY, GLASGOW.—The following gentlemen were elected office-bearers for the year 1896–97 at the annual meeting held on Oct. 31st. Honorary President, Professor T. R. Marshall, D.Sc.; President, Mr. C. F. Spinks; Vice-Presidents, Dr. Duffus and Dr. Battersby; honorary secretary, Mr. F. P. Laslett; honorary treasurer, Mr. A. McCredie.

THE RAHERE LODGE OF FREEMASONS, NO. 2546.—An emergency meeting of this lodge was held at Frascati's Restaurant on Tuesday, Nov. 10th, Brother Clement Godson—acting for Brother Alfred Cooper, the W.M.—being in the chair. Brothers Cross, Willett, and Valérie were made Master Masons, and Brothers Keetley, Barron, and Nall were admitted to the second degree. Fifty members and visitors were present, of whom forty afterwards dined together.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

ACUTE POISONING AND DEATH FROM DRINKING LINIMENTUM BELLADONNÆ IN MISTAKE FOR SCOTCH WHISKY.

BY C. M. O'BRIEN, M.B., L.R.C.P., L.R.C.S.,
LATE SENIOR RESIDENT SURGEON AND REGISTRAR, JERVIS-STREET HOSPITAL, DUBLIN.

THE efficacy of morphine in the treatment of acute belladonna poisoning has led to considerable discussion scarcely yet at an end. The following case, in which the quantity of the poison taken was very large—over two ounces—and the symptoms proportionately severe, may be held by many as unsuitable for the purpose of gauging accurately the potency of even the most pronounced antidote, much less the action of one upon which so much diversity of opinion already exists. But the case has served to strengthen my belief in the inefficiency of morphine as a chemical antidote in acute belladonna poisoning, notwithstanding the physiological antagonism which has been shown to exist between them, as evidenced by their action on the pupils, besides convincing me still further of the necessity of frequently examining the pulse and respiration while administering the drug. Believing that the smallest quota of information may be of some use in dealing with an emergency which in the present state of our knowledge has but few and ill-defined safeguards, I append notes of the case.

On Jan. 5th of this year, at 12.45 A.M., I was rung up to attend a police constable aged twenty-eight years, single, who two hours previously had drunk linimentum belladonnæ, B.P., in mistake for Scotch whisky. On my reaching the barracks (a distance of four miles) twenty minutes later I found the patient quite comatose, with pupils widely dilated and inactive to light, breathing stertorously, the breath smelling strongly of belladonna, the face flushed, the heart greatly excited and weak in action, and the pulse at the wrist quick and readily compressible. The lower extremities were cold, and there were frequently recurring convulsions. Copious vomiting having occurred as a result of emetics previously given both subcutaneously and by the mouth, strong coffee was administered in small quantities and at frequent intervals. Having applied a mustard blister to the cardiac region and warmth externally the patient's condition became so favourable as to allow of my administering morphine, which I did hypodermically (¼ grain) at intervals of twenty minutes. After the second injection, however, I noticed that the pulse and respiration betrayed signs of embarrassment as a result of which I deemed the further exhibition of the drug inadvisable. Under the influence of the stimulants which were steadily administered the pulse and respiration again became steadier and the patient semi-conscious, remaining so for ten minutes but afterwards gradually lapsing into his previous unconscious state. Semi-consciousness and total unconsciousness now alternated at regular intervals for a period of about three hours, after which the patient became more collected, and remained so up to the time of his death which occurred about eighteen hours after his having partaken of the poison. The bowels were moved by a dose of castor oil given in the early stage of the treatment, and urine was freely secreted. The heart manifested signs of flagging, and the pupils were so widely dilated during the entire time that only a ring of iris was perceptible. There was no post-mortem examination.

Dublin.

DIABETES IN A YOUNG CHILD.

BY HORACE WILSON, M.R.C.S. ENG., L.R.C.P. LOND.

THE chief interest in this case lies in the youth of the patient and exemplifies the advisability of examining the urine in all cases of nocturnal incontinence in private practice where this examination is not a proceeding of routine as in hospital work.

On Oct. 21st I was called in to see a child aged four years, the son of healthy parents and fourth child of a family of six, all strong and well with this exception. He appeared to be well nourished, bright, and intelligent, and seemed well in himself. His mother, however, complained that he was growing thin and that for the preceding fortnight he had been wetting the bed. She did not know about his micturition during the day and had noticed nothing peculiar about it. She had administered a worm powder with no effect. On examination the bladder was found to be empty and the prepuce slightly excoriated, but there was no tendency to phimosis. There was no pain or tenderness anywhere, the tongue was moist and of good colour, and the bowels were regular. I prescribed small doses of tincture of belladonna and directed the prepuce to be well washed in the morning and evening with boracic lotion. On the 27th I again was called in to the child, whom I found much paler and much wasted since the previous visit. He was with difficulty aroused to answer questions. He had been vomiting constantly since the previous afternoon and had for the first time wetted his trousers, apparently being unaware of the fact. On closely questioning the parents I elicited the facts that he had drunk large quantities of water for the five weeks previously, and that, "although he had not been well, his appetite seemed to improve." I obtained a sample of his urine and prescribed half a drachm of potassium bromide to one ounce of peppermint water, one drachm to be taken hourly until relieved. On examining the urine the specific gravity was found to be 1035 and it contained six grains of sugar to the ounce. The total amount passed could not be estimated. I again saw him on the 28th and found the patient pale, emaciated, with cold extremities, and small pulse. His pupils reacted to light, but he was quite comatose; his breathing was heavy and laboured, and he was making no effort to swallow. He had not vomited since the second dose of the bromide mixture. The bed beneath him was "floury" with the crystals. He never regained consciousness and succumbed two hours after my visit.

Port St. Mary, Isle of Man.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. GEORGE'S HOSPITAL.

A CASE OF FRACTURED LARYNX; TRACHEOTOMY; THYROTOMY; RECOVERY.

(Under the care of Mr. A. M. SHEILD.)

THERE can be no doubt that this patient suffered a fracture of the thyroid cartilage and that the fracture was a compound one: the hæmorrhage from the interior of the larynx and the emphysema of the neck prove this. The injury was very severe and the case was complicated by the resulting state of the interior of the larynx, as found at the operation when the thyroid was opened. Difficulties in dispensing with the tracheotomy-tube after one has been placed in the trachea may be met with in consequence of spasm or paralysis of the larynx or as the result of mechanical obstruction from the formation of fungating granulations, adhesion of the vocal cords, and cicatricial contraction of the glottis. In this case there appears to have been excessive contraction of fibrous tissue with formation of a web, and Dr. Sheier is of opinion that such contractions are not uncommon after fracture of the laryngeal cartilages. The large mortality following fracture of the thyroid cartilage is exceeded when the cricoid is severely injured no matter how carefully treated. Dr. Sokolowski[1] of Moscow records a case in which permanent obstruction developed after fracture of the cricoid and in which the cartilage had disappeared when the trachea was opened to discover the cause of the stricture. In a case recorded by Dr. Desvernine-Galdos[2] of Havana it was found some years after fracture of the larynx, cricoid, and upper four rings of

[1] Annual of the Universal Medical Sciences, vol. iv., F14, 1891.
[2] Ibid.

the trachea that the vocal cords were adherent, but the patient refused to have any operation performed for the remedying of the condition. For the notes of this case we are indebted to Mr. E. J. Blackett, the house surgeon.

A married woman aged twenty-three years was admitted into the Wellington Ward at four in the morning on July 10th suffering from a fracture of the thyroid cartilage. The following is the history, given by her friends, of the accident. The patient whilst walking in her sleep on the morning in question stumbled against a chair and fell over it, striking her throat against the top rail of the back. She at once awoke and complained of difficulty in breathing and they brought her to the hospital. On admission there was considerable dyspnœa, but very slight cyanosis. There was great swelling of the neck about the region of the thyroid gland, and on examination distinct surgical emphysema could be detected. There was also a copious expectoration of blood and mucus. No crepitus could be made out, owing, no doubt, to the swelling about the parts. Besides the emphysema there was also much bruising about the upper part of the neck. Iced compresses were applied locally and the patient was given ice to suck; these measures served to relieve the dyspnœa. She could only speak in a hoarse whisper, but any attempt at speaking aggravated the dyspnœa and brought on a copious expectoration of blood and mucus. She passed a fairly comfortable day, the dyspnœa becoming at no time very urgent, neither did the patient become more cyanosed. About 9 P.M. she had a severe attack of dyspnœa which came on quite suddenly; she became livid and the breathing most laboured and at one period of the attack almost ceased; during the paroxysm she grasped her larynx with both hands. The attack lasted about ten minutes, and she then became less distressed, the cyanosis was not so marked, and she lapsed into much the same condition as she was in before the attack. Mr. Sheild was sent for at the first onset and on arriving decided to perform immediate tracheotomy. Chloroform was administered and the trachea opened though not without some difficulty as it lay rather deep in the neck and the excessive emphysematous swelling of the parts did not tend to make it the easier to perform; a Durham's tube was introduced. After the operation the patient was much relieved and passed a good night, though still at times expectorating blood and mucus, a point of interest being that none came through the tube, all coming through the mouth. Previously to the tracheotomy a laryngoscopic examination had been made during the afternoon, which revealed considerable swelling and redness of the parts around the arytenoid cartilages; the cords were concealed by redness and œdema. A tent was erected round the patient's bed and a bronchitis kettle employed to keep the air warm and moist. On July 11th the patient remained comfortable. There were no more attacks of dyspnœa. Peroxide of hydrogen (10 vol. sol.) was used as a spray and was most efficacious in controlling the fœtor. On the 13th there was no cyanosis, the neck was becoming less swollen and the surgical emphysema was diminishing. On the 17th laryngoscopic examination showed less swelling and redness about the arytenoids, and there was plenty of room between the vocal cords, which moved freely. Below the cords a substance could be indistinctly seen, like a partly displaced portion of cartilage covered by mucous membrane. On the 18th the tube was plugged with a cork and the patient was able to breathe with ease, thus showing that there could not be much stenosis of the larynx. She passed a good night. On the 20th, the tube having been kept plugged since the last note, at 3 P.M. it was removed. The patient breathed quite quietly. The steam tent was still continued. All the swelling of the neck had subsided. On the 22nd the tracheotomy wound had healed, no air escaping through it. The steam tent was discontinued. On the 29th the patient had been rapidly improving, and being very anxious to return home she was allowed to do so as she appeared quite well again. The breathing was natural, but she could only speak in a whisper. An attack of dyspnœa was reported during the night of the 23rd, but it only lasted a few seconds, and there was no return. The diet during her stay in hospital consisted of nothing but liquids during the first three days, and then it was gradually changed till at the time of her discharge she was taking the ordinary diet of the hospital. The temperature never rose above normal during her stay in hospital. A fresh and curious development of the case now occurred. As has been mentioned above, the patient was discharged to all appearances perfectly well on July 29th. On the 31st she was brought up suffering from urgent dyspnœa, cyanosed, and really in a worse condition than she was in on her first admission. She was at once placed in a steam tent and carefully watched by the house surgeon on duty, Dr. Fiscn. She, however, had a severe spasm of increased dyspnœa and he at once performed tracheotomy, having to be very expeditious. He cut down in the old scar and found the trachea adherent to it. He opened it and inserted a tube. The patient was at once relieved and breathed calmly again. On Aug. 1st the pulse was rapid and feeble; there was still some difficulty in breathing and also slight cyanosis. On the 3rd the breathing was less laboured and there was not so much cyanosis; the pulse was still rapid, but fairly full. On the 6th there was no cyanosis and the patient was breathing freely. On the 12th, on laryngoscopic examination, it was found that the larynx was very much stenosed and the vocal cords very thickened and much approximated; the cavity seemed quite blocked beneath them. Nothing worthy of note occurred till Sept. 1st, when there was some foul discharge from the throat around the tracheotomy tube, as if it came from some necrosed cartilage. After a consultation with the other surgeons, Mr. Sheild decided upon doing a thyrotomy as being the only alternative to the patient wearing a tracheotomy tube permanently. The operation might be able to remove any loose piece of cartilage which might possibly have been detached at the time of the accident. On Sept. 3rd chloroform was administered by Dr. Davidson through the tracheotomy tube, a Junker's inhaler being employed. When the patient was under the influence of the anæsthetic a Trendelenburg's apparatus was substituted for the ordinary tube. Mr. Sheild made a vertical incision, starting from the hyoid bone downwards to the top of the tracheotomy wound, when the thyroid cartilage was exposed; all hæmorrhage was stopped, it having been rather free at one time; the cartilage was then split open, and the two halves held apart with forceps. Mr. Sheild then inserted his finger into the larynx and found a tough cicatricial web stretched across it below the level of the vocal cords. He cut this away with scalpel and forceps, passed his finger upwards, stretching the parts thoroughly, and found there was a free passage into the mouth. Iodoform was then dusted into the larynx, the two sides of the thyroid cartilage were brought together with fishing-gut sutures, and the wound sewn up with fishing-gut and horsehair. Iodoform and collodion was employed to seal the wound. Before sending the patient back to bed an ordinary tracheotomy tube was placed in the trachea instead of Trendelenburg's. A layer of iodoform gauze was placed over the wound. On Sept. 4th the patient passed a quiet night and slept peacefully. The Trendelenburg's tube acted well in preventing the hæmorrhage passing into the lungs during the operation. On the 7th the wound was dressed and looked healthy. The patient complained of slight pain on swallowing. On the 11th there was slight irritation around two of the stitches, so they were all removed; the wound was healed. The tube was plugged and the patient able to breathe freely; the voice improved and was louder than on the previous occasion. On the 17th the tube was removed at mid-day; the tracheotomy wound had quite closed in by the evening, no air escaping from it. On the 18th the patient was very comfortable, breathing tranquilly. The steam tent was discontinued. On the 20th the patient got up for the first time. Her voice was still rather feeble, but gaining in strength. On the 23rd the patient was walking about the ward. Mr. Sheild examined her larynx and found the opening into it practically normal; the antero-posterior diameter would admit a shilling. The vocal cords were very thickened, but the movements of abduction or adduction were present, though to a limited degree. Respiration was free, and she could speak, though hoarsely. The patient was to be kept in hospital for some little time in case there should be any sudden swelling, giving rise to another attack of dyspnœa. Her treatment during the second stay in hospital was similar to that used during the first, with the addition of ten grains of iodide of potassium being given three times a day on account of some suspicious-looking plaques on the tongue.

Remarks by Mr. SHEILD.—Fracture of the larynx is a rare accident and a dangerous one. Durham, in his well-known article in "Holmes's System of Surgery," collected sixty-nine cases, and no less than fifty-three ended fatally. The cricoid was fractured in twenty-eight and all died. Mr. Lane, examining dissecting-room subjects, found fractures of the

larynx and hyoid bone in 9 per cent. This observation is in contrast to ordinary surgical experience. The accident is commonly produced by one person grasping another violently by the throat, as in garroting, from blows, squeezes, cutting the throat with a blunt instrument, and hanging, judicial or suicidal. The symptoms are well illustrated in the present case, and the perils which surround the victims of this accident are forcibly exemplified. A patient suffering from fractures of these parts is in momentary danger of suffocation from displacement of the fragments or from œdematous swelling, and taking all things into consideration it is probably wiser to perform tracheotomy in such cases whenever dyspnœa becomes urgent. These cases should never be left, even for a moment, and this patient largely owed her recovery to the promptitude and care with which she was treated by the house surgeons. The tough cicatricial mass in the larynx was very peculiar, and the explanation of its formation could only be that the mucous membrane below the vocal cords was extensively rent and the plastic exudation and subsequent cicatrisation excessive. The tissue was so tough that no efforts at intubation or stretching from above could have been of any permanent avail. The cavity of the larynx was strongly dilated with the finger. I could feel no displaced cartilage as I expected to do, and now feel quite uncertain as to the exact site of the fracture, except that it was below the cords. It is my intention to keep this patient under close observation for some weeks longer. On Oct. 20th the patient was well and her intonation very good.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Locomotor Ataxy with Tabetic Arthropathy.—Chronic Joint Disease in Children.

A MEETING of this society was held on Nov. 10th, the President, Dr. W. HOWSHIP DICKINSON, being in the chair.

MR. THOMAS WILSON read the notes of a case of Locomotor Ataxy with Tabetic Arthropathy, leading to dislocation of both hip-joints, occurring in a young child-bearing woman. The disease began at the age of sixteen years with shooting pains, especially felt in the lower extremities. The patient was married at the age of twenty-three years, and has had six pregnancies, the fifth ending in a miscarriage at the fifth month, and the other five in the birth of living children at full term. Arthropathy of the knees and hips began at the age of twenty-four years, at the time of the second delivery, and dislocation of the hips took place at twenty-six years, after the birth of the third child. The symptoms of tabes other than the joint affection included unsteadiness on standing with the eyes shut, athetoid movements, loss of knee-jerks, impairment of tactile, painful, and thermal sensation, loss of muscular sense, spontaneous fracture of the ilium, temporary strabismus, Argyll-Robertson pupils, pains of various kinds, and some affection of the sphincters. There was no proof of syphilis, acquired or inherited, but there was a strong family tendency to nerve degeneration. As far as could be ascertained the progress of the nervous affection was not notably influenced by the repeated pregnancies; the tabetic symptoms increased rather rapidly from the time of the second delivery onwards for about two years, after which they became stationary, and have remained so for the whole of the last two years, during which the woman has been under observation. Two of the six pregnancies have taken place in these last two years. From the obstetric point of view the case was of considerable interest. The dislocation of the hip-joints has led to great increase in the pelvic inclination, the conjugate diameter having rotated downwards through an angle of 40° round the promontory of the sacrum as a centre, so that the brim has come to look forwards and a little downwards. On the pains of labour the disease appeared to have no influence.

Dr. G. F. STILL (introduced by Dr. A. E. Garrod) read a paper on a Form of Chronic Joint Disease in Children. He said:—"The purpose of the present paper is to show that although the disease known as rheumatoid arthritis in adults does undoubtedly occur in children, the disease which has most commonly been called rheumatoid arthritis in children differs both clinically and in its morbid anatomy from the rheumatoid arthritis of adults; it presents, in fact, such marked differences as to suggest that it has an entirely distinct pathology. The cases hitherto grouped together as rheumatoid arthritis in children include, therefore, more than one disease; and it will be shown that there are at least three distinct joint affections which have thus been included under the one head, rheumatoid arthritis. Girls are more commonly affected than boys; seven of the twelve cases were girls and five were boys. The onset is usually insidious; the child, if old enough, complains of stiffness in one or more joints, which slowly become enlarged, and subsequently other joints become affected; but occasionally the onset is acute, with pyrexia and, it may be, with rigors. Perhaps the most distinctive feature in these cases is the affection of the lymphatic glands. The enlargement is general, but affects primarily and chiefly those related to the joints affected. The glands are separate, rather hard than soft, not tender, and show no tendency to break down. They may become so large as to be visible, but more often do not become larger than a hazel-nut. The heart shows no evidence of valvular disease, but hæmic bruits were detected in some of the cases. There were some physical signs suggestive of adherent pericardium in two out of twelve cases. The disease in children differs from that in adults clinically in the absence of evidence of bony change in the joints and in the presence of enlargement of the spleen and glands. The most striking difference in its morbid anatomy is the absence of fibrillation of cartilage even in an advanced case and the absence of osteophytic change; the affection of the cartilage is only secondary, and then different from that found in rheumatoid arthritis; thickening of the capsule may be extremely marked."—Dr. A. E. GARROD said that the present knowledge of these obscure forms of joint disease was limited, and the paper read before the society that night tended to throw a great deal of light upon the subject. He had seen many of the cases alluded to in the paper and had been present at one of the necropsies. On examining the joints the cartilage was found intact, but there was a fibrous peri-arthritis, the fibrous capsule of the joint being greatly thickened. The description agreed with that of Brigidi and Banti, who described this condition in adults. The case of one child who had been under his observation for three years, and of whom he had lately had a skiagraph taken, showed that the bones were perfectly natural in shape and the fusiform enlargement occurred around the joint. He thought by this method one would be able to distinguish true rheumatoid arthritis from this form of joint enlargement. He was inclined to include in this class certain cases occurring in the adult with the same characteristics as had been described in the paper.—Mr. A. A. BOWLBY referred to a specimen which he had had the opportunity of examining in which there were excavations in the cartilage. He asked whether the cartilage was effected in this case and microscopically what was the appearance. The nature of the enlargement of the glands and spleen had been stated to be due to tubercle; he asked whether in the case which had been examined whether tubercle had been found and what was the appearance of the gland on section. To some other points he referred—viz., to the nature of the fluid within the joint, the thickening of the synovial membrane, and the condition of the nerves. He stated that in certain cases he had observed thickening of the capsule following injury to a nerve.—Dr. EDMUND CAUTLEY doubted if the disease could be differentiated from that which occurs in adults and is known under the name of "acute osteo-arthritis." He had seen three such cases—one in a patient aged seventeen years, whose first attack occurred when fourteen years old; a second in a patient aged thirty years, whose first attack occurred when eleven years old; and the third in a patient who had his ninth attack when thirty-seven years old. The affection started in the smaller joints and was attended by marked anæmia and sweating. There was no endocarditis; the onset was often acute, but was not attended by any enlargement of the spleen or lymphatic glands. He pointed out that the deformities occurring in the children were the same as those occurring in adults.—Dr. W. P. HERRINGHAM had seen one case in which the bulbous enlargement of the joints was very marked without any enlargement of the bones. In this case there was, however, no enlargement of the glands or of the spleen.—Dr. H. D. ROLLESTON referred to the relation which the disease

described in the paper bears to that described by Marie and known as "infective arthritis." The glands examined from these cases showed a condition of fibrosis. He referred to a diplococcus which was found to be present in these cases by Chaufford and Ramond, and compared it to the affection produced by the gonococcus. He thought there were many points in the disease—viz, the splenic and glandular enlargement, the affection of the synovial membrane and of the pleuræ and pericardium—which were in favour of regarding it as due to an infective process.—Dr. DICKINSON thought the condition might be analogous to that occurring in rickets associated with enlargement of the liver and spleen. In one of such cases he had noted that the spleen contained only one-third of the lime salts contained in the healthy spleen.—Dr. G. F. STILL, in reply, said he entirely agreed with Dr. Rolleston in regarding the disease as an infective one. He said the microscopical examination of the glands did not show any increase of fibrous tissue, but were in the condition of acute inflammation. The cartilage showed a layer of fibrous tissue over its surface, which in parts displayed excavations. He thought there was very little evidence to point to any nervous lesion.

MEDICAL SOCIETY OF LONDON.

Gastro-enterostomy.—Case of Bilateral Deformity of the Lower Jaw.—Lymphadenoma.—Case of Fragilitas Ossium.—Two Cases of Pseudo-hypertrophic Paralysis.—Case of Removal of Pelvic Tumour.—Case of Deformity after Injury to the Hip in a Boy.—Case of Old Dislocation into the Obturator Foramen in which the Head of the Femur has been Excised.

A MEETING of this society was held on Nov. 9th, Mr. REGINALD HARRISON, President, being in the chair.

Mr. LOCKWOOD showed a case of Gastro-enterostomy. The operation was done on Jan. 13th, 1896, for cancer of the pylorus, and the patient was now shown in good condition and increasing in weight. The operation had been done by a method which is not usually practised by other surgeons, but which aims at providing the artificial opening with a complete lining of mucous membrane. This is a point of great importance. A mucous lining renders the immediate result more secure against escape of contents, and subsequently seems calculated to prevent closure of the opening. Briefly the operation was done as follows: first, the peritoneum of the jejunum and of the front of the stomach were sewn together for at least three inches by a row of Lembert's sutures; secondly, the peritoneum and the muscular coat were incised for an inch and a half, separated from the mucous membrane for a third of an inch all round the opening, and sewn together with interrupted sutures; thirdly, the stomach and jejunum were opened by dividing the mucous membrane, which was sewn together all round with interrupted sutures tied on the mucous surface; fourthly, the muscular and peritoneal coats were united above. The result was a very strong and safe junction. The last operation done in this way took fifty minutes, and was followed by little shock. Before the operation the patient now shown was constantly sick and was dying, having an enormously dilated stomach. He could now consume beer and cheese, and were quite comfortable on any simple diet. He was a good example of the success of the excellent operation of gastro-enterostomy.—Mr. W. H. BATTLE related the case of a man aged thirty years who had presented symptoms of pyloric obstruction for only five weeks. On opening the abdomen the stomach was found distended. There was a well-marked growth at the pylorus, extensive secondary growths in the glands, and scattered growths over the peritoneum. A gastro-enterostomy was performed with relief of symptoms, and the patient gained flesh.

Mr. G. R. TURNER showed a case of Bilateral Deformity of the Lower Jaw in a patient aged nineteen years. The vertical ramus of the jaw projected lower than the horizontal so that there was considerable prominence at the angle. There was no ankylosis of the temporo-maxillary joint, but the patient was only able to open the mouth to a very limited extent and could not protrude his tongue. His intelligence was good. The patient had been born by a normal labour. The first and second dentition were apparently normal. The condition appeared to have become noticeable when he was between two and three years old.—Mr. BRUCE CLARKE said the cases he had seen had always been unilateral; the deformity seemed to occur between the second and third year, and was not apparent at birth. In one case that had come under his notice the tongue during sleep had a tendency to fall back and cause suffocation, and for this tracheotomy had to be performed. He compared the condition to that found in hemiatrophy of the face, but stated that no nervous lesion could be demonstrated in his cases.

Dr. DE HAVILLAND HALL showed a case of Lymphadenoma in a patient aged twenty-one years who in January, 1894, complained of indisposition for exertion for eight or nine months and a "dreadful cough." There had been no expectoration, no hæmoptysis, and no night sweats, but he had lost nearly a stone in weight. Impaired resonance at the left apex anteriorly and posteriorly with respiration of a cogged-wheel type was the only abnormal state found. In March, 1895, great glandular enlargement in the cervical and supra-clavicular regions of the right side was noted, and there were a similar enlargement on the left side but less marked and an enlarged gland in the axilla. The left chest was dull to the third rib and the breath sounds were absent over the dull area. In June, 1895, there was a diminution in the size of the glands and the patient had gained slightly in weight. In May, 1896, the patient had lost eight pounds in weight; there was dulness at the base of the left chest with deficient entry of air; the glands were about the same size as before; there was a mass of enlarged glands over the upper part of the sternum; and the spleen was palpable. The skin was much pigmented. On Nov. 7th, 1896, there was dulness all over the left lung, with almost entire absence of respiratory murmur and there was a great increase in the size of the glands. Dr. Hall commented on the difficulty of diagnosis in the first instance, on the slow progress of the disease while the patient was taking arsenic, and on the marked pigmentation; and he raised the question whether the pigmentation was due to the arsenic or to involvement of the solar plexus and adrenals in a mass of enlarged abdominal glands.—Dr. OUTTERSON WOOD pointed out that when pigmentation of the skin was due to arsenic it was found to undergo variations in intensity from day to day.—Dr. CHARLES CHAPMAN related a case of pleural effusion in association with lymphadenoma, in which, owing to the negative pressure within the chest, no fluid could be withdrawn through a trocar.

Mr. CLINTON DENT showed a case of Fragilitas Ossium in a man aged twenty-nine years whose height was only thirty-six inches. He had been healthy at birth, but when four months old a fracture of the right femur occurred. Since that time he had had twenty-seven fractures in the long bones, all of which had united. The movements of his arms were good and he could follow his occupation of watchmaker. He was suckled till he was four years old. His mental condition and intelligence were good. Mr. Dent showed some excellent skiagraphs of the various bones.—Mr. SPENCER WATSON suggested that the condition was due to a mal-nutrition comparable to that occurring in rickets.—Dr. OUTTERSON WOOD compared the condition to that which occured in lunatics, and mentioned a case in which fracture of eleven ribs and fracture of the jaw had taken place.—Mr. CLINTON DENT, in reply, referred to the absence of the preliminary pain in the case, which occurs in mollities ossium before fracture takes place.

Dr. WALTER CARR showed two cases of Pseudo-hypertrophic Paralysis, one in an early, the other in a very late, stage of the disease. The first case was that of a girl aged five years, in whom weakness and difficulty in getting up stairs had been noticed for about a year; she was the youngest of six children, all of whom were quite well, and no family history of the disease could be obtained. She showed the typical difficulty in getting up, together with waddling gait, marked lordosis, and loss of knee jerks. The muscles of the calf were extremely large and hard, and the vasti and infraspinati were hypertrophied. No muscles showed marked wasting. The second case was that of a boy aged sixteen years, who had a younger brother also suffering from the disease. Symptoms had come on gradually for six years; last winter the patient having got too weak to walk contractures of the legs had developed leading to talipes equinus and to extreme flexion of the hips and knees so that he was quite unable to stand. Nearly all the muscles of the trunk and limbs showed marked wasting and weakness, notably the intrinsic muscles of the hands, the biceps, and most of the scapular muscles and the dorsal muscles, whilst those forming the

axillary folds had almost completely disappeared. The muscles of the calf were relatively large and hard, as were to a very slight degree the deltoids and infraspinati. The muscles of the forearm were not affected. The knee-jerks were absent. All muscles reacted readily to the faradaic current.

Mr. D. H. GOODSALL showed a man aged fifty-four years n whom in 1890 a Tumour was found growing from the anterior surface of the Sacrum. Nine months later a left inguinal colotomy was performed. In 1894 the patient began to have pain in the right iliac fossa and in 1895 he began to have pain in the right hip. He lost weight, and in May, 1896, was unfit for work. In June, 1896, an operation was undertaken for the removal of the tumour. The coccyx was first removed, the sacrum was divided in the mid-line to the level of the third sacral foramina, and here it was divided transversely, the two sides being turned outward. It was found necessary to lay open the rectum for three inches, and the growth was removed with a pair of straight midwifery forceps. The patient left the hospital on the forty-sixth day after the operation and was able to follow his usual occupation. The tumour weighed twelve ounces and showed the structure of a fibro-sarcoma.

Mr. W. H. BATTLE showed a boy aged six years who was sent to him with an incomplete account of two or three serious Injuries to the Hip, and it was considered that there was a resulting dislocation. The boy was lame and had a shortening of two and a half inches in the left leg. Free and painless movement was permitted at the hip, and the head of the bone could not be felt. Below the hip there was a projection in front of the femur which was probably caused by a former fracture of the bone followed by faulty union. A skiagraph was shown which demonstrated the fact that there had been two fractures, one about the great trochanter, and the other about four inches below at the point where the projection of bone could most easily be felt. Mr. Battle proposed to perform osteotomy of the femur at the point of lower fracture, for it was evident that faulty union at this place had caused the shortening and lameness from which the patient suffered.

Mr. G. R. TURNER showed a case of a man who had Dislocated his Hip at sea and was not treated till eight weeks later. Attempts at reduction were then made, but unsuccessfully. Three months after the accident he was admitted to the Seamen's Hospital, Greenwich. The patient could only walk with great difficulty with a stick. An incision was made and the head of the bone, found to the inner side of the obturator foramen, was excised. The condition of the patient after the operation was satisfactory, he being able to walk without pain. There was shortening of the limb by two inches.

OBSTETRICAL SOCIETY OF LONDON.

Cleft Spine.—Structure of the Ripe Placenta.—Exhibition of Specimens.

A MEETING of this society was held on Nov. 4th, Dr. F. H. CHAMPNEYS, the President, being in the chair.

Dr. THOMAS G. STEVENS read notes of a case of Completely Cleft Spine associated with an Unusual Visceral Malformation in an Anencephalic Fœtus. The specimen was the result of a labour induced on account of a watery, blood-stained discharge which had persisted for some days. The fœtus presented by the feet and was delivered by traction. There was no history of maternal impression. The fœtus was a female of about eight months' growth and presented a frog-like appearance on account of the absence of neck and cranium and upwardly turned face. It was well-nourished and fat, especially the limbs. The face and features were naturally formed, the ears normal in shape, the external meatus being present and patent. The cranium, with the exception of the base, was absent. Hair was present along the edge of the basis cranii. The chest was prominent, with well-marked mammary elevations. The neck was absent, the integuments being continued straight down from the face to the chest in front and the shoulders laterally. The umbilicus was situated very low down on the abdomen with a piece of healthy cord attached. Below the umbilicus and continuous with it was a rough, irregular elevation, an extroverted bladder with the two orifices of the ureters to be seen at the lower angle. On either side of the ureteric orifices were imperfectly formed elevations representing the labia majora and minora. Between the labia minora the hymen, perforated with three holes, bulged. Just behind the hymen was the anus, a very small opening hidden by a valve of skin. A complete account of the other anatomical peculiarities was given by Dr. Stevens with the exhibition of microscopical slides.—Remarks were made by Dr. DAKIN and the PRESIDENT.

Dr. EDEN read a paper on the Structure of the Ripe Placenta and the Changes which occur in Placentæ retained *in utero* after the Death of the Fœtus. The paper was illustrated with a large number of microscopic sections and lantern slides. The marked structural alterations which the placenta undergoes during the last two months of gestation were described at length, and it was pointed out that those changes had frequently been described as pathological, although in reality they were merely senile in character. Two sets of changes were described as occurring in the retained placenta—primary changes associated with the morbid condition, which led to the death of the ovum, and secondary changes following upon the death of the villi, i.e., the arrest of the circulation through them. The secondary changes were summed up as follows:—1. Necrosis of the following structures commencing immediately upon the death of the fœtus: (*a*) the body of the fœtus; (*b*) the umbilical cord; (*c*) the amnion; and (*d*) the extra-placental chorion and decidua vera. 2. Gradual arrest of the maternal circulation through the placenta by thrombosis of the intervillous spaces. 3. Necrosis of the placental chorion as it becomes shut off from the maternal circulation. 4. Fatty and calcareous degeneration of the necrosing tissues.—Dr. HORROCKS asked if Dr. Eden's observation had led him to any conclusions with regard to the manner in which the placenta received its nutrition. With the exception of the yelk in the ovum, which supplied a certain amount of nutrition, it was quite obvious that the source of the growth of the child and its coverings, including the placenta, was the maternal blood; but considering the intimate union between the villi of the chorion and the maternal tissues was it not possible that the maternal blood might supply the necessary food directly? That is to say, instead of the requisite food stuffs being absorbed into the fœtal blood and then circulated through the placenta for its nutrition, was it not possible for the placental tissue to take up what it required for its own growth directly from the maternal blood?—Dr. AMAND ROUTH inquired whether Dr. Eden meant to imply that the degenerative changes in the full-term placenta facilitated its detachment during the third stage of labour. If so, how did he explain the similar easy detachment when labour was induced at an earlier period? He also asked if Dr. Eden would lay it down as an absolute rule that blood extravasated into the placental structure never became organised. Did it not become organised in apoplectic ova and fleshy moles?—Dr. DAKIN asked if Dr. Eden considered the presence of simple cysts in the placenta at term to be an abnormality. Cysts were not very uncommon, occurring always in his experience in the middle of firm masses resembling those Dr. Eden had described as infarcts and containing clear or turbid serum.—Mr. BELLAMY GARDNER said that an interesting clinical fact bearing upon Dr. Eden's demonstration of the vascular degeneration of the placenta at full term was shown by the absence of appreciable effect upon the child from the anæsthetic inhaled by the mother during parturition.—Dr. EDEN, in reply, said that it was always important that histological work should be reviewed from the standpoint of clinical experience, and he was therefore glad of the criticisms which had been passed by the various Fellows. In reply to Dr. Horrocks he said that the case of vesicular mole was so peculiar that no conclusions could be drawn from it; regarding the normal chorion without actual demonstration of the fact they ought not to adopt the view that normal villi might develop or proliferate after the death of the fœtus. Up to the present time no satisfactory anatomical evidence of such growth had ever been advanced. Some years ago the statement was freely made that the extra-uterine placenta continued to grow after the death of the fœtus, but it had since been proved that the increase in size of the placenta observed in this condition was due not to growth, but to hæmorrhage into its substance. The instances of discrepancy between the size of the fœtus and that of the placenta might have been due to placental hypertrophy, and no conclusions could be drawn in such cases.

The following specimens were exhibited:—

Dr. WILLIAM DUNCAN: Five specimens of Uterine Fibroids removed by the Intra-peritoneal Method.

Dr. MACNAUGHTON JONES: (1) Glass Retractors for Cœliotomy; and (2) a New Uterine Repositor.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Fæcal Fistula due to Self-Mutilation — Intra-Peritoneal Hæmorrhage in connexion with Tubal Pregnancy.

A MEETING of this society was held on Nov. 6th, Mr. BRUCE CLARKE, President, being in the chair.

Mr. BOWREMAN JESSETT narrated a case of Fæcal Fistula due to Self-Mutilation occurring twice in the same patient. This case was reported in full in THE LANCET of Oct. 31st. The treatment on each occasion was abdominal section and enterectomy (1) by Widenham Maunsell's operation and (2) by Mayo Robson's bobbin. The patient recovered. Remarks were made on the treatment of fæcal fistula.

Dr. J. A. MANSELL MOULLIN read a paper on Intra-peritoneal Hæmorrhage in connexion with Tubal Pregnancy. Arrest of the fertilised ovum in the Fallopian tube was of much more frequent occurrence than was generally supposed and was the most common cause of hæmorrhage into the peritoneal cavity. Hæmorrhage was not necessarily due to rupture of the tube. More frequently a more or less gradual loss of blood took place from the "ostium abdominale," and thus slowly effused coagulated with the formation of a tumour. In some instances the tumour was limited by the neighbouring organs bound together by adhesive peritonitis. In other instances the outer layer of the clot became organised, constituting a limiting membrane, as pointed out by Mr. Taylor of Birmingham. These conditions might be combined. As a rule the hæmorrhage occurred at a very early date, within from ten to fourteen days from the arrest of the ovum in the tube. The ovum almost invariably perished at the same time. Dr. Mansell Moullin then drew attention to the leading symptoms of this condition, illustrating them by reference to cases which had been under his care at the West London Hospital, and urged the advantages of early operation in all cases where a considerable hæmorrhagic tumour was present.—Dr. EDEN asked what Dr. Moullin considered to be the anatomical source of the hæmorrhage in cases such as he had described, where the tube was not ruptured and the ovum was not expelled? It was difficult to understand in such cases what could have been the source of the considerable hæmorrhage which occurred. It was possible, however, that the ovum, although not expelled from the tube, was detached from the tube wall and free bleeding might then occur from the placental site.—Dr. DOBSON gave an illustration of the difficulties that might arise in the diagnosis of internal hæmorrhage. A patient two months pregnant took twelve compound colocynth pills and then repeatedly climbed and jumped off a garden wall. She was seized with acute pain and vomiting, but the symptoms were ascribed by the friends to the medicine. Dr. Dobson was not called to see her until after the lapse of ten hours, when she was moribund and died shortly after his arrival. The necropsy showed a tubal pregnancy which had ruptured into the abdominal cavity.—Dr. ROBINSON referred to the importance of contraction of the Fallopian tube as a cause of the hæmorrhage.—Mr. KEETLEY advocated the utility of flushing the abdominal cavity with normal saline solution where hæmorrhage existed, describing a case in support of this method. — Dr. MACNAUGHTON JONES referred to the confusion resulting from the use of the terms hæmatocele and hæmatoma. — Dr. MCCANN dwelt on the necessity for accurate diagnosis and the importance of being prepared to deal with the other causes of internal hæmorrhage before opening the abdomen. He showed how tubal gestation which had ruptured is simulated by a ruptured gastric or intestinal ulcer, a ruptured pyosalpinx, or acute axial rotation of an ovarian tumour. He urged the importance of the following points in making a diagnosis of tubal pregnancy: (1) paroxysmal pain in the lower abdomen; (2) early signs of pregnancy; (3) previous sterility; (4) irregular hæmorrhages from the vagina with the occasional passage of a decidual membrane; and (5) bi-manually a swelling situated to one side and behind the uterus, together with uterine enlargement. As to the importance of salpingitis as a cause of tubal pregnancy two opposite views existed. It must, however, be admitted that really very little was known concerning the etiology, as it had not yet been determined where the ovum meets the spermatozoon or the laws which govern the process. Dr. McCann pointed out the importance of a ring-shaped swelling around the rectum as a diagnostic sign where blood was effused into the left broad ligament. As to the advisability of operating where great shock existed he thought that preliminary infusion of saline fluid should be more extensively tried in such cases. — Mr. MALCOLM expressed the opinion that if a patient was in a state of extreme collapse and there was a fairly definite diagnosis of intra-peritoneal hæmorrhage from rupture of an extra-uterine fœtation there should be no delay in operating and arresting the hæmorrhage.—Dr. MANSELL MOULLIN replied.

MANCHESTER MEDICAL SOCIETY.

Iliac Abscess.—New Surgical Stitch.—Antitoxin Treatment of Diphtheria.—Autoscopy of the Larynx.

A MEETING of this society was held on Nov. 4th, the President, Dr. HENRY ASHBY, being in the chair.

Mr. T. JONES mentioned two cases of Iliac Abscess treated by drainage through the ilium and showed one of the cases. In the first case the symptoms came on while the patient was convalescing from a second attack of pneumonia. He complained of severe pain, which commenced at the back of the left hip and extended down the thigh into the calf of the leg. After some weeks a swelling appeared on the gluteal region. It was incised and a considerable quantity of pus evacuated. The connexion of this abscess with a purulent collection in the iliac fossa was indicated by the readiness with which pus could be made to flow from the opening by pressure over the part. Owing to the want of free drainage the temperature became somewhat irregular, and with the view of providing a freer exit for the pus a drain-hose was made in the thinnest part of the ilium. Directly the bone was perforated the abscess was tapped, there being little or no tissue between the neutral surface of the ilium and the cavity in front of it. The result of this procedure was most satisfactory, and in a month the patient left the infirmary quite convalescent, and now after many months he appeared quite well. In the second case the conditions, curiously, were very similar. Before admission, however, the collection on the gluteal region had given way and the cavity had become foul. This patient, moreover, suffered from phthisis, which, however, did not appear to be active. A similar operation was carried out with very marked benefit; one sinus still discharged a small quantity of pus, but the main cavity had closed.

Mr. E. STANMORE BISHOP demonstrated upon models the various steps of a New Tension Suture designed by him. He drew especial attention to the fact that the "deep" position of the suture lay outside the wound, which when closed now contained no foreign body of any kind except the points of catgut ligature on the vessels; that there was now no track left leading down between the uniting planes of tissue; and that therefore stitch abscesses should they occur were of but little importance. In removing these sutures the free central portions should be divided on either side close to the skin, complying with the rule that no more of any suture should be drawn through the tissues than originally lay in them.

Dr. J. STAVELY DICK submitted notes of two cases of Laryngeal Diphtheria (one requiring tracheotomy) treated with antitoxic serum. The first case was a child aged five years. Membrane first appeared on the tonsils and extended to the larynx in spite of local treatment. The first injection was given probably on the fourth day of the disease without amelioration of the laryngeal symptoms. Tracheotomy was performed the next day. The temperature fluctuated for a period of nearly three weeks, during which time four injections of 10 c.cm. were given. There was marked increase in the amount of albumin after the serum was given. Convalescence was complete in five weeks. The diagnosis was confirmed by bacteriological examination. The second case was a child aged two years. There was an initial lesion in the larynx. Serum was injected probably on the first day of the disease. There was rapid subsidence of the symptoms. The patient was convalescent in eleven days. The diagnosis was confirmed by bacteriological examination. Dr. Dick drew attention to the following points: The notable advantage of early injection in Case 2 and the fluctuating temperature in Case 1, which was possibly a consequence of the serum. No streptococci were found; therefore it was probably an instance of diphtheritic toxæmia or antitoxic septicæmia. It was a clinical fact that the temperature fell rapidly on four different

occasions after serum injections. Increase of albuminuria in Case 1, but no obvious symptoms of renal inaction after commencement of the serum treatment. The patient was tracheotomised. The child was anæmic and badly nourished and subject to epileptic fits. The hygienic surroundings were of the most unfavourable type. The nursing was done by the mother, who had no previous experience. When the trachea was opened after a few inspirations breathing suddenly ceased; this was probably due to apnœa, and not to shock, as sometimes described.

Dr. MILLIGAN gave a short demonstration of Dr. Alfred Kerstein's method of Laryngeal Autoscopy. He first explained the mechanism of the autoscope, and showed how by its use it was possible to have a direct view of the various intra-laryngeal structures instead of a reflected image such as is obtained when the ordinary laryngoscopic mirror is used. He explained how it was possible to see directly the whole of the posterior laryngeal wall, a matter of the greatest importance to all laryngoscopists. The actual method of using the autoscope was then shown, several patients with laryngeal lesions being examined.

LIVERPOOL MEDICAL INSTITUTION.

Two Cases of Traumatic Insanity; Operation; Recovery.—Extraction of the Lens in the Treatment of High Myopia.—Tumours and Enlargement of the Thyroid Gland and their Surgical Treatment.

A MEETING of the above society was held on Nov. 5th, Mr. G. G. HAMILTON, Vice President, being in the chair.

Mr. DAMER HARRISSON read notes of two cases of Traumatic Insanity. In the first case a man had received a severe blow on the right side of the head in 1886. This was at once followed by weakness in the left hand and later by giddiness on sudden movement, momentary losses of consciousness, restlessness, depression, irritability, delusions, and hallucinations. The skull was explored in 1888; a quantity of serum was evacuated from the brain. The man recovered and was now quite well. In the second case a man aged twenty-six years had received a blow in the left frontal region four years previously. Headache and delirium followed. This year he became insane, was suspicious of being poisoned, and had hallucinations. The brain was explored over the site of the scar, well in front of the motor area, some adhesions were broken down, and the insanity disappeared.

Mr. CHARLES G. LEE read a note on Extraction of the Lens in the Treatment of High Myopia. He said that this proceeding had been systematically practised since 1889, chiefly owing to Fukala and Vacher. The principles and the necessary limitations of the operation were considered. As an example, the case was quoted of a young woman, on whom Mr. Lee had operated, who at the age of twenty-one years had a left eye myopia of 27 D, being only able to count fingers; the lens was needled and soft matter evacuated by a linear incision in March. The vision in June in this eye, without the aid of any glass, had improved to $\frac{6}{18}$ for distance; with + 5 D "diamond" type was easily read. At the present time, seven months after the operation, the improvement was maintained. Mr. Lee did not think that detachment of the retina was more likely to take place after removal of the lens.

Mr. F. T. PAUL read a paper on Tumours and Enlargement of the Thyroid Gland and their Surgical Treatment. The paper was based on thirteen cases of non-malignant tumour, four of parenchymatous goitre, and six of Graves's disease. He first dealt with the structural changes and showed that not only in Graves's disease but also in adenoma constitutional symptoms were associated with an increase of gland tissue when that tissue was composed of an actively secreting epithelium. The various modes of operating were described, enucleation and partial thyroidectomy being the two methods practised by Mr. Paul. The former was both simple and successful, and should be employed as freely for adenoma of the thyroid as for adenoma of the breast. Partial thyroidectomy for parenchymatous goitre seemed also a very satisfactory operation. Of the four cases only two had been operated on sufficiently long to give an estimate of the value of the proceeding. In each the opposite lobe had shrunk and the neck looked almost normal. In the six exophthalmic cases the right lobe had been excised in four, a large middle lobe in one, and a large isthmus in one. In all the symptoms were markedly improved. Three patients had returned to work, one to household duties, and two women were in good health. The operation in Graves's disease was serious and often dangerous. All the twenty-three patients recovered and were still living.—Dr. ABRAM said that Wölffler had observed in ordinary goitre an in-growth of the follicle wall, and therefore this point needed re-consideration before it could be accepted as diagnostic of the goitre of Graves's disease. He thought that Graves's disease might be accepted as a thyroid disease and referred to the meeting of the British Medical Association at Carlisle as supporting this view. He thought no man would operate in Graves's disease unless he was convinced of the feasibility of the operation in any given case. The question as to the clear areas between the colloid and the epithelial lining being artefacts or secretion he thought had been settled by Müller, who had seen them adhering as beads to the ends of the cells when the colloid mass had dropped out.—Mr. LARKIN was almost in entire agreement with Mr. Paul, but in the case of exophthalmic goitre he was unable to look at the results with the unqualified pleasure of Mr. Paul. He had given up the operation as the results had been very disappointing in his experience. He was, however, ready to reconsider his decision if he could see any really satisfactory improvement after operation.—Mr. THELWALL THOMAS could not fully accept the view that droplets of secretion were to be made out in the acini of thyroid tumours; he thought the appearance probably due to irregular shrinkage of the so-called colloid material. He remarked on the extreme simplicity of operations for adenomata, but considered that where a mass came out of the thorax during the operation for parenchymatous goitre the case was dangerous on account of the risk of tearing the inferior thyroid veins as they open into the innominate. He mentioned three congenital tumours—one of the thyroglossal duct and two accessory thyroids.—Mr. G. G. HAMILTON, Mr. DAMER HARRISSON, Dr. CARTER, Dr. TAYLOR, Dr. ALEXANDER, and Dr. ROSS took part in the discussion.—Mr. PAUL replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

On the Relation of the Impending Election to the Reform of the General Medical Council.

A MEETING of this society was held on Oct. 28th, the President, Dr. W. B. RANSOM, being in the chair.

Mr. VICTOR HORSLEY gave an address on the Relation of the Impending Election to the Reform of the General Medical Council. Referring to the special opportunities which his connexion with the Medical Defence Union afforded him Mr. Horsley considered that the licensing corporations should be responsible for the repression of those medical men whose conduct was not what it should be. The principles of the Medical Act of 1858 were recounted and mention made of the privileges conveyed by it. Special attention was drawn to the third clause, "that only persons registered be entitled to practise." The varying judgments obtained in different courts were ascribed to the lack of appreciation of this clause; that this failure is due to the General Medical Council not having grasped the fact that "registration" is the only portal to practice. Complaint was made, firstly, that members of the General Medical Council were ignorant of the details of the Act and that some members were unacquainted with the needs of medical practice; and secondly, of the want of routine service in the Council and the absence of an official head and the need of a younger and more energetic President. Disadvantage arose from the registrar not being a medical man. Dissatisfaction was expressed with the way in which the legal business of the Council is conducted, and that unnecessary expense and delay were entailed by the employment of agents in many legal matters. Mr. Horsley suggested that reform might be obtained in three ways: (1) by amendment of the Medical Act; (2) by the establishment of a one-portal system—i.e., a State examination for qualification to practise; and (3) by the amendment of the Act dealing with quackery; but a change could only be brought about by the profession and that the British Medical Association, being the largest organisation, is the most suitable, with the assistance of the

representatives within the Council. In speaking of the qualifications of the candidates for the impending election Mr. Horsley considered that the representatives should be general practitioners and know something of the burning questions of the day, but, in addition, they must be men who will insist on the business of the Council being properly conducted. To do this the representatives must obtain the respect of their colleagues on the Council and they must all work together. For these reasons he advocated the election of Dr. Glover, Dr. Woodcock, and Dr. Drage.

In the discussion which followed the PRESIDENT defended the candidature of Mr. Rivington, but admitted that the fact of his being a consultant was an objection as a representative of general practitioners.

Dr. HANDFORD, though agreeing generally with Mr. Horsley, did not view the several merits of the candidates as the most important point in the election, but the opportunity which it afforded of educating the profession to interest themselves in medical politics. He thought that the Medical Defence Union was doing more to reform the Medical Act than any action of the General Medical Council.

Mr. PIKE (Loughborough), in a racy speech, thought that the distinction between consultants and general practitioners was as hard to determine as that between members of the animal and vegetable kingdoms.

Dr. CATTLE doubted if Parliament would ever entertain the suppression of quackery, deeming that it would amount to an interference with the liberty of the subject.

Dr. HANDFORD briefly proposed a vote of thanks to Mr. Horsley, in seconding which Mr. CHICKEN stated that he had abundantly proved the soundness of Mr. Horsley's views in surgical practice and was therefore willing to take his advice in other matters.

Presentation.—Immunity to Disease.

At a meeting of the society on Nov. 4th the PRESIDENT, on behalf of the members, presented Dr. Cattle with a case of fish knives and forks on his resignation of the office of honorary secretary.

The PRESIDENT then gave an address on Immunity to Disease. After tracing the process of defence against disease met with in the simpler animal organisms up to that occurring in the vertebrata, reference was made to the initial labours of Pasteur in employing inoculation with attenuated matter as a preventative against disease, and the views of many recent investigators in the same subject were discussed.

A vote of thanks to the President, which was proposed by Mr. WILLIAMS and seconded by Dr. WATSON, brought the meeting to a close.

Reviews and Notices of Books.

A Clinical Manual of Diseases of the Eye, including a Sketch of its Anatomy. By D. B. ST. JOHN ROOSA, M.D., LL.D., Surgeon to the Manhattan Eye and Ear Hospital, &c. Illustrated by 178 Engravings and 2 Chromolithographic Plates. New York: William Wood and Co. 1894. Pp. 621.

FROM the preface to this work it appears that it left the hands of the author in September, 1894, which may account for some recent work like that of Ramon y Cajal in regard to the structure of the retina being unnoticed. The work is divided into four parts: the Anatomy and Physiology of the Eye and Vision; the Methods of Examination, the Therapeutics and Surgery of the Eye; Diseases of the Eye and its Appendages; and, finally, the Recognition and Treatment of Errors of Refraction and Affections of the Ocular Muscles. It is a fair subject for difference of opinion whether in a clinical manual it is judicious to occupy nearly a fifth of the space at the author's disposal with an account of the anatomy of the organ, which the student can study for himself in any good anatomical treatise, and still more whether it is prudent to compress the general physiology of vision into a short chapter of eight pages. Every physiological treatise—one of which, it is to be supposed, the student has mastered before taking up ophthalmology—has long sections devoted to the eye, and in the last edition of Funke's Physiology by Grünhagen 300 pages—just a sixth of the whole work—are devoted to this subject; it is, therefore, manifestly impossible in the brief observations here made even to give the essential facts in this department of physiology. The space might have been much better occupied with a more extended description of the relations of the eye to nervous and general diseases or to colour-blindness, all of which are very inadequately discussed. Even in what is given compression might have been effected with advantage. Thus no less than a page and half are devoted to the light streak on the retinal vessels, which in some unaccountable fashion is considered under the head of the Anatomy of the Eye. What is the use of giving the student half a dozen names on opposite sides of the question whether the streak is due to reflection of light from the convex surface of the vessel or to refraction of light proceeding from the underlying tissue by the vessel and its contents? It would have been enough to mention the two views and to have dismissed the subject. We should like, too, to be informed of the meaning of the term Dr. St. John Roosa applies to the levator palpebræ superioris of "inorganic voluntary muscle." Why "inorganic"? There are many paragraphs in the work that are carelessly written. Here is an instance. Speaking of foreign bodies embedded in the cornea and the necessity of examining the eye with a good light he writes: "Sometimes it will be necessary to concentrate one from a double convex lens upon the cornea, oblique illumination, but not usually"; and again, speaking of cysticercus, he says: "Schmidt-Rimpler thinks it improbable that the cysticercus develops from the embryo of the tapeworm, from the individual who carries the tapeworm," a sentence that may be designated as fine, confused reading.

Setting aside these blemishes, which admit of easy correction, the work as a whole is a thoroughly trustworthy guide to the student and young practitioner. The author has had large experience in ophthalmic disease and has naturally formed his own opinions, which he does not hesitate to express with decision on several disputed points. Thus, in regard to the supposed injurious effects of tobacco upon the eye, he remarks: "There has been much loose writing about toxic amblyopia, so much so as to cause a doubt in some minds whether it is so frequently caused by alcohol and tobacco as has been supposed, and some have doubted if amblyopia from tobacco ever occurs. As for myself I am an agnostic as to this latter subject. I have seen amblyopia occurring in those who drank heavily and who also used tobacco, but I am not at all sure that I have seen a case where the constant and even immoderate use of tobacco alone has caused amblyopia." Again, in discussing the treatment of glaucoma he remarks *àpropos* of sclerotomy that this operation "has proven a failure as a substitute for iridectomy and need not be considered by the surgeon who has to deal with a case of glaucoma requiring operation."

The account of cataract affords abundant evidence of the large experience of the author. He remarks that simple extraction without iridectomy is the operation most frequently performed in New York for hard cataract, and approves of it except in certain cases, as where intemperance in the patient is likely to lead to iritis, or, as we should be inclined to add, where the iris has been bruised during the escape of the lens owing to the corneal section being too small or where the iris exhibits a strong tendency to protrude or where there is much hæmorrhage. He leaves the bandages first applied untouched for several days and justly deprecates any attempt to open the lids to see whether the wound has united. We, however, hold it to be advantageous to remove the first dressings after twenty-four hours as they are apt to become stiff and stained, whilst a gentle cleansing of the lids with a piece of

cotton wool dipped in boracic acid solution is refreshing to the patient. The author finds the instillation of a drop of atropinised oil or of hydrobromate of scopolamine into the eye less irritating to the patient than a watery solution in cases where some iritis has been excited. He has no hesitation in performing the operation of extraction in cases of diabetes or in chronic Bright's disease. An interesting series of diagrams of the different sections of the cornea that have been proposed from the time of Daviel is given. Dr. St. John Roosa very judiciously recommends the student not to rely too completely on statistics, as the difference between the results of selected and unselected cases is often very considerable, whilst the proportion of successful cases is not in all cases borne out by reference to the tables on which they are founded. He gives the details of a remarkable case under the care of Dr. Loring, as well as references to others, in which accommodation was preserved after the removal of the lens. The fourth part, which deals with errors of refraction and strabismus, has evidently been written *con amore* and contains some valuable tables in regard to the occupations of those who are subject to asthenopia and of the degree and kind of corneal astigmatism. The author gives a very full and precise account of the ophthalmometer, to which he chiefly trusts for the determination of the degree and direction of the astigmatism present in any case. Retinoscopy he considers to be a method of very little importance when the ophthalmometer is properly employed and relied upon. He appears to believe that it is of little value unless the eye is under the influence of atropia or some other mydriatic, and that it is of no value without a mydriatic in determining whether in a given case a low degree of hypermetropia or myopia exists. The plan of using the ophthalmometer and then verifying its readings by the use of atropia and retinoscopy he strongly condemns. "It is," he says, "as if a mariner after having made a good observation with a sextant declined to record his latitude until he had verified it by dead reckoning." The card method, with lines at different angles, he thinks has been carried altogether to too great an extent by practitioners. Patients soon contradict themselves, for the simple reason that there is so little difference in the perceptive power with weak convex or concave glasses that very few people can be relied upon to give correct answers. Like most Americans he prefers ether as an anæsthetic to chloroform on account of its greater safety.

The chromo-lithographs, though recognisable, are not very satisfactory; the woodcuts, on the other hand, are well executed. There is a very large and useful glossary of ophthalmic terms. The book is well printed and, like all the publications of Messrs. Wood, excellently got up.

Prize Essays on Leprosy. By G. NEWMAN, M.D. Edin., E. H. EHLERS, M.D., and S. P. IMPEY, M.D., M.C. London: The New Sydenham Society. 1896.

To the authors of these essays were awarded the prizes offered by the National Leprosy Fund Committee, which was established a few years ago under the presidency of His Royal Highness the Prince of Wales. They form a highly interesting and instructive series of contributions, in the main historical, upon the question. The first in the volume, by Dr. George Newman, deals with the history of leprosy in Britain, its full title being "On the History of the Decline and Final Extinction of Leprosy as an Endemic Disease in the British Islands." The author admits that various affections were doubtless included under the term "leprosy," but he has been careful to confine his study to the true disease — Elephantiasis Græcorum — as far as that was possible. His researches prove the erroneousness of the belief that the disease was imported into this country by the Crusaders, for he shows conclusively that long prior to that period leprosy had gained considerable foothold. Nor does he think that the opinion prevalent from the eleventh century that leprosy owed its extension to its contagious and hereditary character is borne out by evidence. The institution of leper houses throughout the country is described with fulness; and the precise character of these early isolation hospitals and the manner in which they were conducted is well sketched. It is shown that at least 200 of them existed and that residence in them was more or less compulsory. At the same time Dr. Newman hesitates to admit that they were founded with the object of segregation, an object which they certainly did not attain. The disease as an endemic began to decline in the fourteenth century, its disappearance being probably hastened by the Famine (1315) and the Black Death (1349), so that in the sixteenth century it had nearly disappeared. It lingered on in a more or less sporadic way until the eighteenth century. In reviewing all the conditions which may have influenced the occurrence of the disease Dr. Newman gives a striking picture of the mode of life and the lack of hygiene in the Middle Ages, which leads him to the conclusion that the change for the better in these respects had far more influence in banishing leprosy than segregation, which, as he proves, was most imperfectly carried out. To a certain extent his conclusion accords with the view so stoutly maintained by Mr. Jonathan Hutchinson, that a diet of stale fish is a chief factor in the etiology of leprosy, for during the leprous periods such was the prevalent dietary of the people, and the abandonment of this dietary coincided with the decline of this disease. At any rate, he thinks that this may well be one of the modes whereby the lepra bacillus enters the body. Appended to the essay is an instructive chronological table in which the progress of leprosy in this country is contrasted with other data concerning the disease elsewhere throughout the centuries. We have already fully noticed the remaining essays in this volume when originally issued by the National Leprosy Fund,[1] and may content ourselves here with a brief indication of their scope. The second essay, by Dr. Edward Ehlers of Copenhagen, is on the Conditions under which Leprosy has declined in Iceland and the Extent of its Former and Present Prevalence. It may be remarked that his own personal inquiry showed that the disease is more prevalent at the present day than has been thought, and it is estimated that there must be about 200 lepers on the island now. It seems to have been introduced from Norway after the Crusades, and the popular dread of contagion has had more influence in checking its spread than the four leper hospitals which were founded in 1651 and were finally closed in 1848. It is instructive to note that here, as in Britain, the decline of leprosy was aided by devastating epidemics, of which two are especially signalised—namely, the small-pox epidemic of 1707, which "swept away one-third of the whole population," and the epidemic of measles in 1846. The influence of insanitation is also marked, whilst the staple diet of dried fish is a noticeable feature. The essay contains several interesting records of family transmission and some of undoubted infection, the author remarking that few countries are so favourably placed for epidemiological research as Iceland. Two brief essays by Dr. S. P. Impey, medical superintendent of the Robben Island Leper and Lunatic Asylums, close the volume. The one treats of the Prevalence of Leprosy in South Africa and the other with the subject of Spontaneous Recovery from Leprosy. These papers deserve careful attention, whilst the second gives a more hopeful view of the disease than is generally entertained.

[1] THE LANCET, Feb. 29th, 1896, p. 555.

Clinical Diagnosis. A Practical Handbook of Chemical and Microscopic Methods. By W. G. AITCHISON ROBERTSON, M.D., F.R.C.P. Edin., &c. London: The Scientific Press, Limited. 1896. Price 6*s*.

THIS little book is an attempt to present, in the compass of some 350 small pages, a tabular account of the principal chemical and microscopical methods which are of use in clinical diagnosis. It is intended for students and busy practitioners, and its style is necessarily highly condensed—so much so as to suggest at times that of Mr. Alfred Jingle. There are many tests which can readily be performed in the ward or the consulting-room, and there are others which can only be efficiently carried out by the trained expert in well-equipped laboratories. We are of opinion that it is a mistake to attempt the tabulation of both in a single small volume. In the present work we think the author would have been well advised either to have left bacteriology severely alone or to have treated it in adequate detail. It is not possible to present in a page and a half any account of the methods of bacterial cultivation which can be of value to anyone. The statements made elsewhere about individual micro-organisms are often inaccurate and misleading. Thus "bacillus col communis" is regarded as a synonym of "bacterium termo,' and no methods are given for distinguishing the typhoid bacillus from this organism. The important matter of the recognition of the diphtheria bacillus receives wholly inadequate treatment, and on p. 153 the student would be led to believe that the tetanus bacillus was to be found in the blood. In other parts of the book serious defects are not altogether absent. In the section on examination of the blood no reference is made to the different varieties of leucocythæmia; on p. 183 we find suppression of urine confounded with its retention. Enteric fever appears under its proper name in one place, while in another it figures under its German appellation as "typhus abdominalis." The plural of spirillum is not "spirilli," and we can find no warrant in our Greek dictionary for such a spelling as "osteomalachia." The purely chemical part of the book is distinctly the best and the section on the urine, which occupies nearly half the volume, contains full and adequate details of all the important tests and methods employed in its examination—more, indeed, than the busy practitioner will be likely to find time to employ. There is, in fact, much that will be found very useful to those for whom the book is intended, presented in a concise and summarised form, but we venture to think that it would be much improved by a careful revision and by the omission of some of the more complicated methods which can only be properly performed by those who have had an adequate training in chemical, bacteriological, and pathological work.

An American Text-book of Obstetrics for Practitioners and Students. By various authors. RICHARD C. NORRIS, M.D., Editor. ROBERT L. DICKINSON, M.D., Art Editor. With nearly 900 Coloured and Half-tone Illustrations. Parts I. and II. London: The Rebman Publishing Company, Limited. 1896. Price 42*s*.

THIS work has been written with the object of producing a book that should embody the teaching of several prominent American obstetricians, thus including recent advances in the theory and practice of obstetrics, and should at the same time serve as a standard text-book for students and a guide to practitioners. We are told in the preface it has been more especially the intention of the editors "to make clear those departments of obstetrics that are at once so important and usually so obscure to the medical student." Here we think, perhaps, that they somewhat exaggerate the obscurity of the subject, and undervalue the material already available in the form of several excellent text-books on midwifery for illuminating such obscurity as actually exists. At the same time there is generally something attractive about a fresh presentment even of familiar facts, and to this attraction there are added in the work before us several features that in no small degree contribute to make it a welcome addition to the literature of the subject. We may more especially instance the illustrations, many of them beautifully coloured, for which we have nothing but praise. There is, we think, no work on midwifery in which the illustrations are so numerous and excellent. The figures are all drawn to scale, usually one-third or one-sixth life size. The work consists of two volumes and is divided into six sections, treating of the Generative Organs, Pregnancy, Labour, the Puerperium, the New-born Infant, and Obstetric Surgery respectively. In the chapter on the Pathology of Pregnancy we observe that the author, speaking of maternal impressions, is of opinion that "there is certainly more than coincidence in the fact of fright and shock and the subsequent malformation or marking of the fœtus."

In discussing the use of forceps in face presentation the author considers that when the chin is pointing posteriorly the forceps is contra-indicated. Cases have, however, occurred in which, with the chin persistently posterior, the application of forceps and the employment of traction merely have been followed by rotation of the chin forwards and the birth of the child alive. As between Cæsarean section and craniotomy it is interesting to find it stated that "the results of Cæsarean section in America have so far been disappointing, the mortality from the operation being much higher than in Europe." There is a short but sufficient notice of symphysiotomy; and there is also an account of Cœliotomy for Sepsis in the Child-Bearing Period. The book as a whole impresses us chiefly by reason of its illustrations; on account of its size, it appears more suitable as a work of reference for practitioners on particular points than as a textbook for students—unless, indeed, the American student prefers larger and heavier books to those generally popular with his English cousin.

Section Cutting and Staining. By W. S. COLMAN, M.D. Lond., Second Edition. London: H. K. Lewis. 1896. Price 3*s*. 6*d*.

THIS very excellent little work now reaches a second edition and has been largely re-written. It will be found to contain all the important improvements in histological methods which have been recently introduced, and the descriptions given are clear, accurate, and evidently based on the writer's own practical experience. The chapter on the staining of the nerve tissues, in which so much advance has been made of late, is particularly good and up to date. The chapter on the staining of blood and of micro-organisms might with advantage have been somewhat fuller and more detailed, but this is a separate study which may perhaps justly be passed over lightly in a book specially devoted to section cutting and staining. Dr. Colman's book may be very strongly recommended to all who are practically engaged in the study of normal and pathological histology. That its merit has been recognised is evidenced by the appearance of a second edition, and the author has spared no pains to bring it into line with the most recent advances on the subject.

JOURNALS AND REVIEWS.

Archiv für Pathologische Anatomie und Physiologie. Band 146, Heft 1. Oct. 1st, 1896. Berlin: G. Reimer. 1896.—This number of *Virchow's Archiv* opens with a paper on Actinomycosis by Dr. Habel based on five cases observed in the wards of Professor Eichhorst at Zürich. The cases show how closely this disease may simulate tuberculosis in its clinical features, and more than one of them was actually combined with the latter infection. As the diagnosis

cannot with certainty be made until the actinomyces are discovered in the discharges it is more than likely that only a minority are recognised during life. The cases recorded comprise examples of pleural, pulmonary, pericardial, intestinal, and hepatic actinomycosis. Diphtheria forms the subject of two papers, one by Dr. Schellong on the Distribution of the Disease in Tropical Countries and the other on the Changes in the Cardiac Muscle in Diphtheria by Dr. Scaglioni of Palermo. The latter goes to prove the occurrence of parenchymatous myocarditis from the toxæmia, and is thus confirmatory of previous pathological researches by Leyden, Oertel, and others. Dr. Max Glogner writes on the Clinical Forms of Beri-beri, and other papers deal with Alcaptonuria with Fæcal Extravasation and on Certain Points in Regard to the Bacterial Agencies in Putrefaction.

Annales d'Oculistique. Année 59. Tome cxvi. Livraison 4. Dr. E. Valude, Directeur. October, 1896.—(An English Translation is published at New York by Dr. G. Stevens). In addition to reports of societies and reviews the following articles are contained in this number: 1. Dr. E. Sulzer—on Some Results of Clinical Ophthalmometry, in which he shows that myopia is not in all instances due to an increase in the length of the axis of the globe, but in some instances to the curvature of the cornea. 2. On False Glaucoma, by M. L. de Wecker. 3. On the Treatment of Entropion and of Granular Trichiasis of the Upper Lid by Tarsomarginoplasty with Pediculated Flaps by M. H. Truc and M. H. Villard. In this article a historical account is given from the first operation devised by Mr. Spencer Watson to the present time of the various methods proposed for the relief of entropion. 4. Observations on a case of Congenital Corneal Opacities by M. Otto Wernicke of Buenos Ayres. 5. A Contribution to the Study of Foreign Bodies in the Eye by M. Cervera Torres of Valencia.

The Edinburgh Medical Journal (November).—There is a most interesting paper by Surgeon-Captain C. H. Bedford, M.D. Edin., I.M.S., upon Criminal Abortion in the Punjaub. Twenty-six cases were referred to the writer (in his capacity of Chemical Examiner to the Punjaub Government) in the twelve months, November, 1893, to November, 1894. The instrument generally used is a stick dressed with cotton wool carrying some virulent substance.

The Cornhill Magazine (November) has an account of the famous trial of Madeleine Smith, accused of murdering her lover, a French adventurer named L'Angelier. That he did die from arsenic poisoning is certain, but who administered it to him, or whether he took it himself, will probably never be known. The papers of the time of the trial, 1857, described Madeleine Smith as bright, attractive, and of remarkable beauty. If this was the case her portrait in a verbatim report of the trial which lies before us is a gross libel.

In the *Ludgate Magazine* (November) Miss Arabella Kenealy has a vampire story. There are only two vampire stories which are really good, and this is not one of them, though passable. The two to which we refer are J. S. Le Fanu's "Carmilla," a story of the real Eastern European warm vampire, and an appalling story related by Baring-Gould in his book on Iceland about a cold and decomposing variety. Miss Kenealy's hero remarks: "If I were to write that story in THE LANCET I should be the laughing-stock of the profession ..... but there are scores of vampires in this very town. When A—— talks with me ten minutes I feel ten years older." The traditional vampire may be a myth, but there certainly are a number of passable imitations.

The November part of the *Leisure Hour* commences a new volume. One of the features of this magazine is that some of its articles are always topical, and the interest now being taken in the discovery of the Pole and in American affairs is responsible for the two excellent articles dealing with these subjects. The present issue is embellished with two well executed tinted plates, "An Earthly Paradise" and "A Love Letter," after Alma Tadema and F. D. Millet respectively, and there is a double page series of eighteen portraits of the chief Arctic explorers of the nineteenth century.

Analytical Records
FROM
THE LANCET LABORATORY.

MALT NUTRINE.

(AGENCY: W. A. RICHARDSON, 108, CLYDE-ROAD, SOUTH TOTTENHAM.)

MALT nutrine is not unlike brown stout inappearance, but it is quite free from acidity and possesses a milder taste, while its alcoholic strength is trifling. The taste is rich and malty with a *soupçon* of bitter derived from hops. An analysis yielded the following results: alcohol, by weight 2·33 per cent., by volume 2·93 per cent., equal to proof spirit 5·13 per cent.; extractives, 15·65 per cent.; mineral matter, 0·32 per cent. The mineral matter consisted almost entirely of alkaline and soluble phosphates and the extractives of dextrin and malt sugar. The preparation, there is little doubt, possesses nutritive and tonic properties of peculiar value, which in the former respect is enhanced by the favourable effect exerted by a slight excess of carbonic acid gas, which also renders it agreeably effervescing.

ALBERT WATER (NEUE QUELLE, BISKIRCHEN).

(W. GRADENWITZ, 14, COPTHALL-AVENUE, E.C.)

This water is derived from a new well in South Germany, and our analysis shows it to belong to the mildly alkaline and carbonated class of mineral waters. It contains 3·52 grammes of mineral salts per litre, which consist principally of common salt, carbonate of lime, and a small quantity of carbonate of soda. It is considerably less alkaline than most of the continental mineral waters, but, on the other hand, it is remarkably pure and free from organic matters. It contains a slight excess of carbonic acid gas and is desirably soft and only slightly saline to the taste. The specimen we examined was contained in a stone bottle. This method of bottling is open to serious objection, as the stoneware vessels are likely to be used as receptacles for all kinds of objectionable and dirty liquids or even solids, which, not being easily seen, may escape the notice of those entrusted with the cleansing of "returns."

HEALTH NIGHT-LIGHTS.

(FOWLER'S PATENT NIGHT-LIGHT COMPANY, LIMITED, PLANET WORKS, LATORIA-ROAD, S.E.)

The word "health" applied to these night-lights appears to be based upon the fact that they contain a minute quantity of di-bromo naphthalene ($\frac{3}{10}$ grain, equivalent to about $\frac{1}{10}$ grain of bromine), which on being drawn up into the wick and burnt gives off bromine. Some years ago we had occasion to notice some night-lights designed in a similar way and with the same end in view. We set no value upon them from the point of view of treatment of the respiratory passages during sleep as is suggested. With the small amount of bromine above indicated the lights before us, however, are probably quite harmless, since the bromine evolved would soon be dissipated and absorbed, while its antiseptic and disinfectant action would be exceedingly remote and for any practical purposes *nil*. In some cases of throat affection the method might be tried—i.e., with candles giving off an appreciable quantity of bromine—but not indiscriminately, and only by medical men. Bromine is, of course, an irritant and escharotic. In spite of the small quantity of bromine given off by these "lights" its presence could be easily established in the products of combustion by

aspirating them for several hours through a solution of potassium iodide, when a small but distinct amount of iodine was found to be liberated.

"NUTRIO-VIS."

(FREDK. MASON, YORK WORKS, ACRE-LANE, BRIXTON, S.W.)

This (as it proves) excellent preparation consists of a brown jelly containing 86·54 per cent. moisture and 13·46 per cent. dry matter. The latter is composed of the insoluble albuminous portion of meat, 9·08 per cent.; soluble nitrogenous principles, 3·06 per cent.; and 1·37 per cent. mineral matters. It is composed largely, in fact, of just that portion of beef-tea which used to be erroneously rejected, but which has been shown to possess the vigorous and strength-giving properties of prime beef. The microscope shows, further, a uniform distribution of a small quantity of meat fibre. The preparation is practically free from salt, which permits of the patient seasoning it in accordance with his taste. The specimen we examined was in sound condition and free from objectionable preservatives. It is an important and desirable addition to the list of foods that are really serviceable in the cause of the sick and invalid.

OAT MALT STOUT.

(MACLAY & CO., ALLOA.)

We presume that this alcoholic beverage is made partly, if not entirely, from oat malt. It possesses a peculiar oaten flavour, which, of course, is quite distinct from that of ordinary stout. It contained 5·20 per cent. extractives and 0·32 per cent. mineral constituents, the latter, as might be expected, containing the soluble phosphates of the cereal. The alcohol amounted to 5·12 per cent. by weight or 6·40 per cent. by volume, which is equivalent to 11·21 per cent. proof spirit. It is free from objectionable excess of acidity and possesses a ripe flavour. The oat presents some important differences in composition to that of barley, notably in containing much less nitrogenous matter, more fat, more starch, and a small proportion of mineral salts. On dietetic grounds there is thus no *raison d'être* for the substitution of oat for barley malt, and the flavour is not nearly as good.

"ROLLED OATS" BREAD.

(WILLIAM WILKIE, DYSART AND KIRKCALDY.)

This may be regarded as a substitute for oat cake. The loaf possesses a fine rich oaten flavour and presents a perfectly uniform texture. Its food value of course cannot be doubted, since it must contain the same excellent proportion of flesh-forming nitrogenous constituents, fat and bone-forming ingredients, as does the oat itself.

POTTED MEAT.

(HOLLIDAY, AUDLEY HOUSE, CLIFTON-ROAD, LLANDUDNO.)

The ratio of water, solids, and mineral constituents in this excellent preparation was found to be practically the same as in fresh meat. Thus it contained 67·90 per cent. water, 29·92 per cent. of solid matter, and 2·68 per cent. of salts. The meat substances, however, have been carefully pulped and seasoning has been added. The preparation is an excellent delicacy and particularly well adapted for invalids, being free from objectionable preservatives and contained in closed glass and not metal jars.

MEDICAL SOAPS.

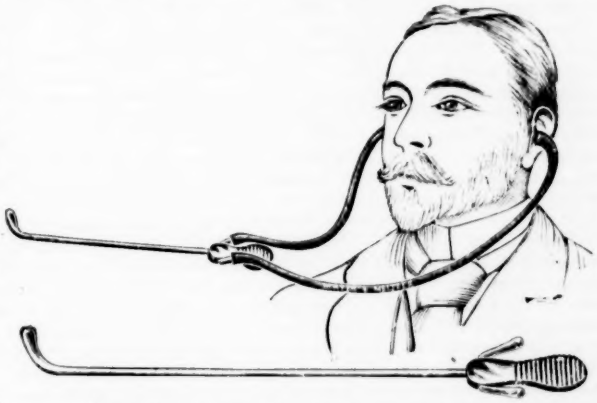
(ALLEN AND HANBURYS, PLOUGH COURT, LOMBARD-STREET, E.C.)

We have carefully examined into the claims which are advanced in regard to the purity of these soaps and find them in no wise overstated. Thus chemical analysis established the freedom of the basis from the common impurities of soap such as excess of alkali, objectionable resinous matter, foreign mineral matters, colouring, &c. On the contrary, the specimens were found to contain a distinct though small excess of fat, while each and all proved to be desiccated to a maximum degree. In addition to two excellent specimens of soap for toilet use, one especially adapted for the delicate skin of infants (Allenburys baby soap), we have received some specimens of "medical soaps" which this firm are introducing, the basis of which is soap of the same admirable purity of character. Types of these are: boracic acid soap, carbolic soap, coal-tar soap, ichthyol soap, iodoform soap, juniper tar soap, menthol soap either with or without eucalyptus, naphthol and sulphur soap, resorcin and salicylic acid soap, sulphur soap either with or without Peruvian balsam, terebine soap, borax and camphor soap, and white precipitate soap.

New Inventions.

AN ACOUSTIC BLADDER SOUND.

THE sound consists of an ordinary solid metal sound, from the handle of which two small metal horns project to which the indiarubber tubing of an ordinary binaural stethoscope is attached after the sound has been passed into the bladder. This sound is particularly useful after stone-crushing operations to ascertain whether any small pieces have been left behind or not. I have used it in several cases in which I have performed litholapaxy, and have discovered fragments of stone remaining which I failed to detect by the ordinary sound. This is particularly the case when the mucous membrane of the bladder has become hypertrophied and is inflamed and irritable. Fragments of stone are detected so readily by this means that much harmful feeling about with the ordinary sound is avoided by inexperienced operators. It is a decided improvement on the ordinary sound in examining for stone in the bladder or prostate in the first instance, and gives more definite information as to the hardness, &c., of the stone. A phonendoscope may be used in lieu of a stethoscope, when the sound is even more intensified and the smallest particle of stone can be detected with the stethoscope in the ears; the hands are perfectly free. It is possible it might be of use in certain cases of tumour of the bladder also. The sound can be obtained from Messrs. Mayer and Meltzer, 71, Great Portland-street, W.



RICHARD HEARD, Surgeon-Captain I.M.S.

THE HOSPITAL SCHEME AT GUILDFORD.—At the last meeting of the Guildford, Godalming, and Woking Joint Hospital Board plans were accepted for the erection of a hospital on the Whitmoor-common site, the battle for which, it will be remembered, was fought and its suitability maintained in the law courts. Application is to be made for a loan of £3500.

THOMAS WAKLEY,

THE FOUNDER OF "THE LANCET."

A BIOGRAPHY.[1]

CHAPTER XLIV.

Wakley's Attitude towards Quacks.—Chabert, the "Fire King."—Wakley's Public Exposure of him.—Dr. Elliotson.—His Experiments in Animal Magnetism at University College Hospital.—Knave or Dupe?—The Exposure of the O'Keys by Wakley.—Elliotson's Resignation of his Posts.

THE pages of THE LANCET offer numberless examples of Wakley's "shortest way with dissenters" from orthodox medical faith. He had a genuine horror of quacks and was keenly alive to the wrongs which the medical profession suffered then, as it suffers now, from the lying statements and impudent pretensions of charlatans. The avowed quack, possessing no medical qualifications and glorying in, or affecting to glory in, their absence, who promises the public all sorts of cures for all sorts of diseases upon methods unknown to that hide-bound victim of formulæ, the educated practitioner, found in Wakley a relentless foe. He never tired of ridiculing the claims of such persons, and had an inexhaustible vocabulary of contempt wherewith to describe their methods and their drugs. With the more insidious quack—he who works from within the ranks of the profession and employs illicit means of treatment apparently for the benefit of his patients, but really for the gratification of his own vanity or greed—Wakley was equally severe, pointing out that whether honest or no in his departures from accepted medical tracks the result would be the same—he would fill his pockets at the expense either of foolish dupes who are ever seeking some new thing or of despairing sick groping blindly for the remedy which honest men have told them does not exist at the present time for their hopeless plight. Against these two unamiable classes Wakley was always ready to fight to the end. He examined their systems, analysed their nostrums, and roundly abused the public for their credulity and the State for its apathetic attitude towards mischievous or criminal persons. As good examples of his methods the exposures of Chabert the "Fire King" and the O'Keys, Dr. Elliotson's mesmeric mediums, may be mentioned. Chabert was a blatant quack, a fire-eater, a prussic acid swallower, and an obviously vulgar impostor, whose rightful sphere in life was the booth of a country fair. Dr. Elliotson was one of the most distinguished physicians of his time, a man generally accepted, not only in his profession, but among the public at large, as an acute and profound thinker. But to both Wakley meted out the identical treatment of complete exposure as soon as their methods appeared to him to endanger the reputation of medicine or the health of the suffering public. Chabert he ridiculed as a common cheat, while Dr. Elliotson received always the respect due to a man of great performance in his profession. But this distinction was not carried further. In each case Wakley, having discovered trickery, warned the public that they had been gulled.

M. Chabert flourished in London at the end of 1829. He was said to be a discharged *chef de cuisine*, and he appeared nightly at the Argyll Rooms in the character of a "Fire King," when he went through some sort of a performance in support of his professions of ability to endure enormous heat. He swore that he could withstand the temperature of an oven at cooking power and that he could drink with impunity and even relish oil raised to 300° F., boiling water, and molten lead. Nor was this the limit of his talents. Not only did he claim for his corporeal system a remarkable security from the attacks of heat, but he also asserted that he was organically protected from the action of certain virulent poisons—e.g., prussic acid, arsenic, and phosphorus, which lethal substances he pretended to swallow in the presence of his dupes. He asserted that he had an antidote to their actions. Such rudimentary trickery would not in our days be considered worthy of the notice of a serious scientific paper—though whether this silent contempt for chicanery is not giving the charlatan an unfair chance at the expense of the public is an arguable point,—but sixty-five years ago the level of general knowledge was lower and Chabert's assumptions were accepted with equanimity by responsible persons. Among them, surprising to say, were to be found several members of the medical profession. Wakley, therefore, announced his intention of exposing the "Fudge King," as he called him. He challenged him to drink boiling water in public concerning the temperature of which a proper jury of spectators was satisfied. With regard to Chabert's ability to swallow prussic acid Wakley said that he would attend the wizard's performances and would invite him to administer his prussic acid, with or without the antidotes, to certain dogs, the insinuation being clear that it was not prussic acid at all that the "Fire King" was in the habit of swallowing publicly, but some innocuous fluid. Chabert ignored this challenge save by a ridiculous offer to accompany Wakley into an oven at a temperature of 600° F. or join him in quaffing oil at 350° F. Wakley not, as he said, feeling disposed for public immolation, and having put forward no claims to a knowledge of the trick, simply reiterated his request that Chabert would allow him to attend a public performance with two dogs and a small supply of prussic acid of whose purity he was himself convinced. Chabert and one of the dogs were to drink a portion of the prussic acid in view of the public, and then receive the benefits of the antidote, when, according to Chabert's professions, they should feel no ill-effects. The other portion of the prussic acid was to be given to the second dog, which not being treated with the antidote would die, as a visible proof to the audience of the genuineness of the poison which Chabert had swallowed. In pursuance of his design Wakley made a grim application to the magistrates of Bow-street to inquire into his own position supposing he should induce Chabert to drink a genuine prussic acid, "which," said Wakley, "will infallibly kill him at once." The magistrates, in answer to this startling question, said that although they felt it right that Chabert's pretensions should be stringently tested in the interests of the public, Wakley must beware of urging the man towards self-murder. They considered that the responsibility of any untoward accident would fall upon Wakley's shoulders. Wakley pointed out that he was not going to administer the prussic acid himself, but simply take care that real prussic acid was forthcoming. Then if Chabert persisted in his claim either to immunity from the effects of that poison or to the possession of an antidote he would ask that the experiments should be performed with a substance of undoubted virulence. It would be Chabert's own act if harm accrued to him. Accordingly on Saturday, Feb. 4th, 1830, the Argyll Rooms were crowded from floor to ceiling, a large number of scientific and medical men being present in addition to the usual crowd, in the expectation of seeing Chabert respond to

[1] Chapters I., II., III., IV., V., VI., VII., VIII., IX., X., XI., XII., XIII., XIV., XV., XVI., XVII., XVIII., XIX., XX., XXI., XXII., XXIII., XXIV., XXV., XXVI., XXVII., XXVIII., XXIX., XXX., XXXI., XXXII., XXXIII., XXXIV., XXXV., XXXVI., XXXVII., XXXVIII., XXXIX., XL., XLI., XLII., and XLIII. were published in THE LANCET, Jan. 4th, 11th, 18th, and 25th, Feb. 1st, 8th, 15th, 22nd, and 29th, March 7th, 14th, 21st, and 28th, April 4th, 11th, 18th, and 25th, May 2nd, 16th, 23rd, and 30th, June 6th, 13th, 20th, and 27th, July 4th, 11th, 18th, and 25th, Aug. 1st, 8th, 15th, 22nd, and 29th, Sept. 12th, 19th, and 26th, Oct. 3rd, 10th, 17th, 24th, and 31st, and Nov. 7th respectively.

Wakley's challenge. Chabert opened the ceremony by a quaint speech in broken English, in which he tried to shuffle out of the consequence of his stupid boasts. He asserted that he had never said that *he* would swallow prussic acid himself, but that he would give it to dogs and then cure them with his antidote. On this so prolonged were the shouts of ridicule from the spectators that Chabert's manager had to come to his assistance by supporting his statement. This was a foolish proceeding, as the printed bills actually outside the Argyll Rooms at the time flatly contradicted both the wizard and his manager. In answer to loud calls from the audience Wakley then rose to speak. He denounced the subterfuges of Chabert, and produced a small vial of prussic acid from his pocket which he proceeded to offer to the "Fire King," assuring him at the same time that he knew it to be out of the question that any antidote could save him if he drank it. "You will give one gasp and be dead in ten seconds," said Wakley, tendering the vial with a smile. The poor charlatan tried in vain to interrupt Wakley's relentless words and, while refusing the poison, to get a hearing from his excited audience. But in vain. The general feeling was wholly against him, and at last he fairly fled from the platform shouting promises to give passes to the audience entitling them to be present at an uninterrupted *séance* at a future date. In the front of the hall, however, he was caught by the crowd and roughly handled, and finally fled in a dishevelled condition to the friendly shelter of a neighbouring coal-cellar.

The other person whose detection in quackery forms an excellent example of Wakley's methods of dealing with imposture was Dr. Elliotson, senior physician to University College Hospital. Elliotson was a very different person from Chabert. He was the senior physician on a staff second to none in Europe for brilliancy, comprising as it did Samuel Cooper, of the Surgical Dictionary; Liston, the most marvellous operator of his day, certainly the boldest and probably the most successful surgeon London has ever seen; Richard Quain, the author of "The Anatomy of the Arteries"; Anthony Todd Thompson, author of "The Dispensatory" and a mine of pharmacological lore; and Robert Carswell, the most learned pathologist in England. He was co-professor at the medical school of University College with these and with Robert Grant, the zoologist, author of "Outlines of Comparative Anatomy" and Huxley's predecessor as Fullerian Professor at the Royal Institution; and with Sharpey, the profound physiologist, and the autocrat of the elections of the Royal Society. In this splendid company Elliotson more than held his own. A thoughtful lecturer in the class-room, a most acute physician in the wards, and an original, unconventional thinker in every capacity of life, he was respected and admired by his colleagues, much consulted by the public, and immensely popular with the students. Being such a man as he was, the story of his connexion with animal magnetism and of his experiments in a kind of black art conducted at University College Hospital forms one of the most extraordinary pages in the medical history of the century. And at the outset of the story it should be said that Elliotson was believed by all who knew him to have acted in perfect good faith—to have been, in fact, a dupe and not a rogue. He was a great experimenter and prided himself on his receptivity and readiness to learn. He had made many valuable observations in the uses of drugs, and he was wont to stimulate his classes by pointing out that in the domain of therapeutics the student had open before him a virgin country waiting the explorer. Anatomy and surgery as then taught appeared more or less finite subjects. The enormous developments that physiology and pathology would experience as a result of the study of micro-organisms were not foreseen, and Elliotson, a sanguine, imaginative man, looked about him in vain for some outlet for his inventive mind. As bad fortune would have it he came across at this juncture a certain Baron Dupotet, who had experimented in Paris with mesmerism. He obtained for Dupotet permission to make a trial of his methods of healing in the wards of University College Hospital. Elliotson's own association with these experiments was at first that of an interested spectator. Avowedly on the look-out for departures in therapeutics, Baron Dupotet's claim to relieve, and in some cases cure, epilepsy by the production of the mesmeric slumber seemed to him to fall within the range of legitimate inquiry. Had he stopped here all would have been well. Had he been content with a simple attempt to benefit the sick, of whose desire to recover there could be no doubt, and whose only collusion would have consisted in a reasonable endeavour to play into the hands of the physician by faithful obedience to orders, no one would have objected—at any rate, no one would have had a good case on which to found their objections. But, unfortunately for Elliotson, he was led to employ mediums of whose good faith he had no proper guarantee, and by their pretended powers and revelations to see in mesmerism a new force for good or ill in the world. Everything that is or has been meant by the terms hypnotism and hypnotic suggestion, Perkinism and animal magnetism, transferred vision, exoneurism, and telepathy, seems to have been put in practice by Elliotson in conjunction with his two mediums, Elizabeth and Jane O'Key, while his initial intention to use the new force, whatever it might be, as a therapeutic measure was entirely lost sight of. These two hysterical girls being thrown into slumber were invited to tell the time by watches applied to their elbows or navels; were asked questions as to the proper medical treatment of themselves and other patients; and were apparently twisted into convulsions by passes made at them from a distance by Elliotson or by contact with certain fluids or metals which had been previously charged with "magnetism" by being held in Elliotson's hand. The performance was mystical and inconclusive, for no certain results were ever obtained. It, moreover, showed a tendency to degenerate into indecency, while the only therapeutic innovations that resulted from it would have given effect to the dangerous precedent of allowing patients to prescribe for themselves and even to interfere with the prescriptions of their fellow sufferers less marvellously gifted. It was no wonder that the hospital authorities were much exercised in their minds at Elliotson's behaviour. Two camps were quickly formed. The governors were opposed to the continuance of performances which were gaining the institution much unfavourable notoriety and cheap ridicule. Certain of the students, headed by Liston, supported the governors' view. On the other hand, Elliotson had a grand argument and a great following. The argument was, of course, that all innovators are deemed mad or dishonest by their slower witted cœvals and that the wild impossibility of to-day becomes the trite routine of to-morrow. The following consisted of the majority of the students, who were personally attached to Elliotson, who could bear witness to his wisdom and sincerity in other things, who were content to believe what he believed, and who were, moreover, fascinated by the atmosphere of occultism. The "hospital of all the talents," as it was called in recognition of the all-round scientific excellence of its staff at the time, was thrown into absolute disorder.

The attention of Wakley was naturally directed to the situation, and he immediately wrote in THE LANCET that the solution to the trouble lay entirely in the answe to the question whether the O'Keys were or were not honest and trustworthy. If they were trustworthy—and in

no walk in life would the words of hysterical epileptic young women placed suddenly and by accident in a position of enormous public notoriety be considered worth any attention at all—then Elliotson, Dupotet, and their disciples had made a discovery. But if the O'Keys were impostors, what were Dupotet and Elliotson? Clearly dupes or rogues. From this inference articles in THE LANCET allowed no escape. Elliotson accepted the challenge with a willingness and alacrity that certainly vouched for his good faith. He offered to bring his mediums to Wakley's house in Bedford-square and there exhibit their powers of prophesy, transferred vision and clairvoyance, and extraordinary susceptibility to certain metals and fluids. Accordingly on Aug. 16th, 1838, a performance—for no other name describes the proceedings—was given in the drawing-room of 35, Bedford-square for the benefit of ten persons, five chosen by Wakley and five invited by Elliotson. Among those invited by Elliotson to be present was Mr. J. Fernandez Clarke, at that time and for many years a member of the staff of THE LANCET and the author of some interesting autobiographical recollections of the medical profession. Mr. Clarke was regarded by both sides as a friend, and although he was present by Elliotson's request was willing to further Wakley's intent to arrive at the truth. Accordingly, at a particular experiment an arrangement was made between them to test the honesty of one of the mediums, Elizabeth O'Key. Of this girl it was alleged by Elliotson that she would fall into convulsions upon being touched by a piece of nickel, but would remain placid under contact with lead. Discs of these two metals were then given by Elliotson "charged with magnetism" to Wakley, who was seated in front of the girl, a screen of pasteboard being set between them. Wakley immediately gave the nickel, unperceived by Elliotson, to Mr. Clarke, who put it in his pocket and walked to the other end of the room, where he remained during the experiment. Wakley now having nothing but the lead in his possession, to which metal the medium was supposed not to react, bent forward and touched the girl's right hand. As he did so a bystander by arrangement whispered audibly: "Take care that you do not apply the nickel too strongly!" Immediately the medium fell into strong convulsions, much to the gratification of Elliotson, who said that "no metal but nickel had ever produced these effects" and that "they presented a beautiful series of phenomena." Wakley at once pointed out that no nickel had been used, and upon Dr. Elliotson's indignant protest Mr. Clarke came forward and explained the trick that had been played, producing the nickel from his own waistcoat pocket. Wakley at once said that his point was made and that the girl was proved an impostor, but Elliotson was persistent that some error had occurred. He considered it possible that in some unexplained way "the power of nickel had been present." The experiments were consequently persevered in both on that day and on the following day, with the result that the behaviour of the muddled mediums became entirely at variance with that which was expected of them. Not only did they fall into convulsions on contact with the unexciting lead, but they remained impassive when rubbed with the influential nickel. They drank water which had been "mesmerised"—this was Elliotson's word, and the process consisted in the owner of the master mind placing his finger in the fluid for a few minutes—without a spasm, when it should have rendered them rigid; while water straight from the pump produced opisthotonos! "Mesmerised" gold from Elliotson's hands had no ill-effect on them, while sovereigns non-impregnated with the magnetic fluid and emanating from the trouser-pockets of sceptics produced neurotic results of a marked character.

Wakley denounced the whole thing in THE LANCET as a pitiable delusion. He made no reflections upon Elliotson, who was a personal friend of his own, and had been a writer in THE LANCET from the inception of the paper, but he told the whole story of the experiments to the public, and no one who read the account could fail to see that Elliotson had omitted proper precautions, that his so-called scientific experiments were parlour jugglery indifferently stage-managed, and that he himself had imported into the question a degree of personal interest which had unbalanced him and unfitted him for the responsible posts of Senior Physician to the University College Hospital and Professor of Medicine in the Medical School. In December of the same year the Council of University College passed a resolution to the effect that the hospital committee were to hold themselves instructed to take such steps as they should deem advisable to prevent the practice of mesmerism or animal magnetism in future within the hospital. Dr. Elliotson considered this resolution personally offensive to himself and at once lodged his resignation of the posts of physician to the hospital and lecturer to the medical school with the Council of University College, at the same time making an appeal to the students to demonstrate in his favour against the limitation which had been put by the Council upon the range of legitimate scientific inquiry. The students at an exciting meeting, and by a slender majority, ratified the action of the Council, resolving that they "sincerely regretted the circumstances which had *necessarily* led to Dr. Elliotson's resignation." On the same day Dr. Elliotson's resignation was accepted by the Council.

(To be continued.)

THE PLAGUE IN BOMBAY.

THERE does not seem to be any room for doubt that the disease in Bombay is identical in its nature with that which prevailed in China. Professor Haffkine and other observers have, after a bacteriological examination of numerous cases, established the identity of the Bombay disease with bubonic plague. Dr. Surveyor recognised the micro-organism of the Hong-Kong plague at an early date after the appearance of the disease in Bombay, and Surgeon-Captain Childe and Mr. Dutt, as well as Dr. Surveyor, have since found it in abundance in the different organs of the bodies dead from the disease. We are glad to report that there has been a very marked decrease of late in the number of cases of plague at Bombay as well as a reduction in the fever death-rate of the city. The overcrowding has been greatly diminished by the exodus of people from the affected districts owing to the alarm created by the outbreak, and very vigorous sanitary measures have also been adopted.

Although some cases of bubonic plague have, as we have previously reported, appeared at Calcutta, the disease we are glad to learn has not apparently spread there to any extent. The Medical Board at Calcutta reported on Oct. 22nd that six cases of fever accompanied by swelling of the lymphatic glands had been reported, but the board is of opinion that there are at present no grounds for believing any of these to be cases of true bubonic plague. At the same time, as the disease prevails in Bombay, the board desires to impress on the corporation the public necessity of taking effective measures to improve the sanitation of Calcutta. Many parts of Calcutta are greatly overcrowded and very insanitary, and these conditions would afford an excellent soil for the plague bacillus. Every attention should therefore be at once given by the local sanitary authorities to the cleansing and improvement of the city. Surgeon-Colonel Ross, Inspector-General of Civil Hospitals, states that there is a tendency for people attacked with fever to suffer also from lymphatic gland complication, which, he adds, is, under present circumstances, significant.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 14, 1896.

THE touching and natural tribute to the integrity, high-mindedness, and singleness of purpose of the late President of the Royal College of Physicians of London with which Dr. GOWERS so fittingly prefaced his Bradshaw Lecture will find an echo in the heart of everyone who knew him, and the loudest and most enduring echo in the hearts of those who were privileged to know him most intimately. Such a tribute had a peculiar appropriateness from one who claimed the late President as his "oldest medical friend," and who was the recipient of his last official request—the invitation to deliver this Bradshaw Lecture. The subject of the lecture, "The Subjective Sensations of Sound," is one which forms a fitting complement to that of the Bowman Lecture of 1895 by the same author on Subjective Visual Sensations, and if, from the very nature of the subject, it cannot possess the same fascination or be characterised by the same wealth of graphic illustration, it cannot be said to suffer in any way by comparison as regards either scientific interest or practical utility. No higher aim is claimed by the lecturer than that of recording observations of auditory sensations of labyrinthine or central origin and of deducing from the comparison of such observations indications pointing to their nature, and hints which may aid, on the one hand, in their further elucidation by the scientific observer, and on the other hand in their successful treatment by the practising physician. A comparison between visual and auditory sensations in such a lecture was almost inevitable. The latter are no doubt much more common. They are also incomparably more troublesome from the point of view of treatment, and in not a few instances they are the precursors of, or are definitely associated with, grave psychical, changes. As regards their nature the two sensations are similar. They are both excited by energy in the form of wave motion, but there is an essential difference in the character of the waves and an almost inconceivable difference in the rapidity of the motion. The waves of light may be traced upwards until they vanish beyond our perception in the now familiar x rays, while sound waves can be reduced in frequency until they are actually perceptible by the sense of touch. Such a close relationship to tactile sense is interesting in view of the fact that in some of the lower forms of life the analogue of the ear is a piece of skin with some hairs on it, and it is important in reference to the apparent anomaly that one part of the auditory nerve has nothing to do, or at least has but a very indirect connexion, with hearing.

Of all subjective auditory sensations tinnitus is undoubtedly the most common. In the great majority of cases it is the result of some change in the ear, and most commonly in the labyrinthine portion of the ear; but it may also be central—the result of disturbance of the cortical area subserving hearing,—as is evidenced by some cases of epilepsy with an auditory aura and by some cases in which disease of the temporo-sphenoidal lobe has been actually demonstrated. But the curious fact is pointed out in the lecture that there is no evidence that disease or disturbance of the auditory nucleus in the medulla can give rise to the symptom. The interesting, and we believe up till now unasked, question is also discussed, Why does the patient refer so constantly these auditory sensations to the inside of the head and not to the external world? Visual sensations are referred externally, why not auditory? The explanation offered—and we may be permitted to doubt whether it is an adequate one—is that occasionally tinnitus, but more frequently the more elaborate auditory sensations, are so referred in the first instance, but experience leads to the correction of this impression and induces the patient to believe that the noises he hears are really in his own head or ears. Associated with tinnitus there is occasionally another sensation, such as throbbing—a simple sensation rather than an auditory, and in some cases succeeding some such auditory sensation as buzzing. Such sensations Dr. GOWERS believes (and his view will probably commend itself to most) to be due to a disturbance of afferent nerves other than that of the special sound sense, the existence of such afferent nerves being evidenced by the fact that internal ear disease may cause pain, and any morbid condition which acts on the auditory nerve may also act on nerves that have a different function and so produce an effect on consciousness.

Among the many points dealt with in reference to tinnitus is the fact that it is sometimes referred to the head and to a particular part of the head. Many such cases are so peculiar as to baffle every attempt at explanation; some may be explained by remembering that the causes of labyrinthine disease are for the most part random processes, and the nerve endings may be affected in various combinations, so that it may occasionally happen that a combination may be affected which corresponds to some part of the skull. The relation of tinnitus also to external sounds is interesting. Often it becomes audible only during silence. Sometimes an external sound excites it or increases it, or alters its character in such a way as to suggest central coöperation with the labyrinthine change. It is not difficult to imagine that in many cases a morbid functional condition of the centre may be induced by long-continued labyrinthine symptoms, and so also give rise to associated auditory sensations of central origin. The brief reference in the lecture to vertigo as a concomitant in so many cases of noises in the ears leads us to hope that the author may from the wealth of his material expand this part of the subject at some future time, for it is alike interesting in its scientific aspect and important to a large class of sufferers. And the glimpse which we get in the lecture of Dr. GOWERS' views of the relations of vertigo to central subjective sensations of sound, especially those associated with epileptic attacks, only stimulates our interest without satisfying our curiosity. One point of great practical importance is the brief reference to the degree of

elaboration of subjective sound which is consistent with labyrinthine origin. Some degree of elaboration may depend upon labyrinthine changes alone, but when the sounds that are heard are of voices uttering even indistinct words they must be regarded as the result of central changes.

What is said in the lecture concerning the pathological changes which underlie these various sensations is of much interest, and while it may be said to be meagre in regard to actually observed changes it is very rich in suggestions as to probable nature of these changes. In some cases, of course, the gross changes, concretions and the like, have been found; in most, however, even when symptoms have been severe and prolonged, no obvious change has presented itself. Probably in any organ of such structure minute and unrecognisable changes, the result it may be of some toxic blood state acting upon tissues already beginning to wane, must be invoked as a feasible explanation. The fact that bilateral deafness may occur in early life from labyrinthine disease is significant, as all such specially restricted changes are, because they show the existence of certain morbid conditions which have a selective action upon special parts, and similar conditions may exist in later life sufficient to produce not, perhaps, complete abolition, but grave impairment and perversion of function. And such a view of the pathology of the condition indicates the difficulty which has to be encountered in treatment—a difficulty, however, which it is hoped is not insurmountable, and may become much less as soon as we are able to perceive more clearly the nature and relation of the factors concerned in the production of the morbid change. To the careful search into these interesting, if intricate and difficult, problems this lecture may well serve as a guide and a stimulus; and if it is not given to all to possess in happy combination the scientific imagination and the faculty of patient, painstaking, clinical observation so abundantly manifested in this Bradshaw Lecture, each one may at least, from a study of such work, be encouraged to fresh efforts for the elucidation of truth and the combating of disease.

WE have commended Dr. GLOVER, Dr. WOODCOCK, and Dr. DRAGE to our readers as fit and proper persons to represent the profession at large in England upon the General Medical Council, and have also recognised that Mr. RIVINGTON, in asking for support, has undeniable right to expect it from an electorate whose interests he has served nobly on the Council of the Royal College of Surgeons of England. We now desire to deal in brief with the claims of certain of the other candidates that it may be seen that we have not ventured to suggest the direction that votes should go without due discrimination. Our desire has been singly and simply that the men most competent to watch over the interests of the general practitioner should be elected to the ruling body of our profession.

Three candidates have been recommended to the voters by the Incorporated Medical Practitioners' Association in an open letter to the medical practitioners of the United Kingdom signed by Dr. BEDFORD FENWICK. These are Mr. GEORGE JACKSON, Mr. GEORGE BROWN, and Dr. R. R. RENTOUL. A fourth candidate is linked in the minds of all with the same Association—viz., Dr. ALDERSON. With the aims of the Incorporated Medical Practitioners' Association we have every sympathy, but upon their choice of candidates and upon Dr. BEDFORD FENWICK'S testimonial we must be allowed to comment briefly. Against the selection of Mr. JACKSON we have not a word to say. He is a justly respected general practitioner, and may hope to command a certain proportion of the southern votes. Mr. BROWN has told the profession in public what he intends to do if elected, and it constitutes a very vigorous programme. We do not desire to belittle his record, though we confess it has been easier for him to trace the influence of his personal work in the cause of medical reform than it has been for us, while any claim he may advance to support as the founder of the first medical defence society is much weakened by the fact that the Medical Defence Union does not support his candidature. But granting him to have accomplished something that has been useful to his brother practitioners while without the General Medical Council, what is to happen if Mr. BROWN, upon being elected within the Council, can do none of the things that he has promised to do? What is to happen if the Council, being constituted as it is and possessing the machinery that it does, fails to fall in with Mr. BROWN'S views in their entirety? Parley is impossible with Mr. BROWN; he himself has said it. He himself has said that if at the end of three years of office he cannot effect certain reforms he will "go to Parliament and sweep them (that is, the Council) off the face of the earth as unclean."[1] All who think will see at once what would occur at the first check which Mr. BROWN received if he were elected to the Council. Either he would break his word and not offer an ineffectual resistance, which would be prudent but not very creditable; or he would persist without having attached to himself any following among his fellow councillors—for a man who speaks of sweeping people off the face of the earth as unclean will not commend himself to the thoughtful as a leader—and so one vote out of a possible five on the Council would be lost to the general practitioner, sacrified to Mr. BROWN'S impracticability. To turn to Dr. RENTOUL we have again a candidate whose methods would prevent him from being a useful representative of the profession on the Council. Dr. RENTOUL is known to all of us as an earnest worker against the registration of midwives. But his medico-political horizon is bounded by the midwives question. He has thought of it until he cannot get away from it. He has the poor taste to allow himself to heckle and hector his rival candidates on the matter. He writes and speaks as if no one but himself understood it and as if he were the only consistent person in the protection of general practitioners from some subtle and organised conspiracy on the part of the General Medical Council and even of Imperial Parliament to ruin them. We do not consider that a man so unable to justly apprize in his own mind probabilities and possibilities and their comparative urgency is a man to whom the general practitioners of England would be well advised to confide their interests. Vitally important to the

[1] Brit. Med. Jour., Sept. 26th, 1896, p. 877.

general practitioner as the question of the registration of midwives is—and all the candidates agree with Dr. RENTOUL upon this point, he is neither singular nor exceptionally impressive—it can and must be discussed in the Council in a cooler manner than Dr. RENTOUL'S prejudices in favour of his own doctrines would allow him to comply with. Then we have Dr. ALDERSON. This gentleman comes forward as a candidate because of the large number of votes that he received on a previous occasion when supported by the Incorporated Medical Practitioners' Association, and because also, as we understand, he received, or believes that he received, some pledge that their support would be continued to him in the future. But Dr. ALDERSON has not been nominated as an official candidate by the executive of the Association on this occasion, which puts him or that executive in an awkward position. Either Dr. ALDERSON'S chief reason for offering himself to the electors does not exist, or that very executive which has incurred the responsibility of recommending candidates to the profession has itself not discharged its responsibility to an old friend and chief. For the rest we do not consider that Dr. ALDERSON has displayed in his electioneering literature quite the orderly and practical mind that an unimpeachable representative should possess, and we suspect him of believing that an overloaded programme is a symbol of reform, and that the working day of the General Medical Council contains an abnormal number of hours.

The candidates selected for the profession by the Incorporated Medical Practitioners' Association claim, we believe, to be particularly sound on the midwives question. It will, therefore, be a matter of surprise to those who look to Dr. BEDFORD FENWICK'S letter to give the reasons of the Association for seeking support from "the medical practitioners of the United Kingdom" for three particular gentlemen to find in that letter not one word on the subject for which the Association takes any responsibility. The three candidates have made their statements upon this point in frank, unequivocal language, for which they deserve credit; but the astonishing fact remains that their letter of credit from the Association to the profession barely mentions the subject. Apparently opposition to the registration of midwives forms no plank in the Association's platform. Mr. GEORGE JACKSON, Mr. GEORGE BROWN, and Dr. RENTOUL are actually the nominees of a body that has not considered the question of the registration of midwives worth discussing in its official letter to the practitioners of the United Kingdom. This policy of silence in Dr. BEDFORD FENWICK'S letter we consider to be a serious flaw by the side of which the little slip in accuracy which we now comment upon may seem a trifle. Dr. BEDFORD FENWICK'S letter, however, says that the Association has decided to support Mr. GEORGE BROWN as a candidate who "has been for more than twenty years editor of the *Medical Times and Hospital Gazette*." Mr. GEORGE BROWN in our columns last week refused to take the responsibility for an article which appeared in that journal on the grounds that he was simply "a member of the staff." We do not for one moment attempt to saddle Mr. BROWN with any responsibility for the article. He has repudiated it and that is sufficient for us. But if he has given the right reason—if he is not still, and has not been, for twenty years editor of the paper—his statements and that of Dr. BEDFORD FENWICK are at serious variance. Some one has blundered over a matter of fact and we do not think lightly of such errors when they are made on the eve of an election either by a candidate or by the President of the Association which supports him.

WE have received several communications relating to the attitude of the Local Government Board towards guardians and public vaccinators desiring to use calf lymph instead of humanised lymph in accordance with one of the recommendations of the Royal Commission on Vaccination. At first sight the attitude of the central board seemed to be one of antagonism towards that which is regarded by many, both at home and abroad, as constituting progress in the matter of public vaccination, and we have therefore endeavoured to make ourselves acquainted with the precise conditions which have influenced the Local Government Board in some of the refusals with which they have met the requests of boards of guardians who have sought permission to provide calf lymph for the use of their public vaccinators. It appears, in the first place, that the Board have no objection whatever to the use of calf lymph when vaccination is done directly from calf to arm; indeed they always accept this as corresponding to vaccination from arm-to-arm. Their objection is to the unnecessary use of preserved lymph as opposed to fresh lymph, and the objection applies as much to one form of lymph as to the other. The following appear to be the principal grounds for this objection. In the first place they find that the use of preserved lymph—whether calf or humanised—is more associated with "insertion-failure" than fresh lymph from either the calf or the arm is. In the second place the whole of our English vaccination law from 1867 downwards is based on a series of attendances and arrangements which were designed to secure to the utmost that vaccination should be performed with fresh lymph from arm-to-arm; and hence the system of awards which the Act of 1867 provides for carries with it compliance with that law and the regulations made under it. The Local Government Board are therefore tied to this law just as the public vaccinator is, and they cannot sanction departures from that law until it has been repealed, however much they desire so to do. For some time past they have raised no objection to a public vaccinator using calf lymph; but since this departure from the regulations involves loss of award they feel bound, when the matter is put before them by letter, to explain that they have no power to authorise any change pending fresh legislation, and they issue a warning as to the chances of the loss of the award which they can only grant under the existing law.

If guardians could have instituted calf-stations, then vaccination with fresh lymph from calf-to-arm could have been carried out in the provinces just as it is at the Government calf-station in London. And from a letter which the Local Government Board have recently sent to the Cardiff and other guardians it appears that they have consulted the law officers of the Crown as to whether this could be done, with the result that it has been decided that "the guardians of a union or parish cannot themselves supply calf

lymph for ordinary vaccination," unless, indeed, under some special emergencies involving an actual or anticipated outbreak of small-pox, such as are contemplated in Section 28 of the Vaccination Act of 1867. The Local Government Board are even more averse to the supply by guardians of preserved calf lymph, for they hold that it is the public vaccinator, as a medical practitioner, who must be held responsible for the character and source of any lymph which he uses, and that no guardians, whether individually or collectively, can by supplying him with lymph relieve him from this responsibility. Where, notwithstanding these considerations, boards of guardians still insist that the public vaccinator shall use calf lymph and where that officer is himself ready to do so, although under the present regulations he would in consequence lose his award, there have been cases in which the guardians have raised the fee for vaccination, so as to cover the cost incurred by the public vaccinator in procuring a trustworthy supply of calf lymph; and we believe we are correct in saying that the Local Government Board have consented to such increase of fee. Where this is done the public vaccinator should to the utmost endeavour to secure that the vaccination shall be successful in not less than four places, and that his results shall not fall short of those which he obtains with fresh lymph from arm-to-arm. The objections which have been raised to the effect that an equally efficient protection against small-pox is obtained by vaccination in, say, two places, must be regarded as having been set at rest by the conclusion at which the Royal Commission on Vaccination have arrived, where they say: "There is a very marked contrast between those with four or even three marks as compared with those with either one or two."

We believe we have now explained the difficulties which at the present moment attach to the extension of a general vaccination with calf lymph to our national system. The latter is an old system; it could not be modified whilst the Royal Commission was sitting; fresh legislation always has been and still is necessary to its modification; and the main difficulties which are complained of apply as much to the central authority as to the local vaccination authorities, both being bound by the same statutes in so far as any essential or radical change is concerned. But whilst this is the case we hope that every medical practitioner will do what he can to convince his Parliamentary representative that the ensuing session must not be allowed to pass without fresh legislation embodying that which is good in the recommendations of the Royal Commission. Further delay can only do infinite harm, for the present time is looked upon by many as a sort of interregnum in which it is doubtful whether the old law or a new one foreshadowed by the Commission is to be acted on, and in the meantime the tendency is, in many places, to carry out neither the one nor the other.

THERE was once a time when comparatively little learning was required to qualify a young fellow for a commission in the army, but it seems that we are now going to the other extreme in this respect, considering the limits of age—from sixteen to eighteen—at which candidates enter for competition, the physical qualifications necessary to the making of a good officer, and the nature of his duties when he has become one. We have been looking over the regulations for admission to the Royal Military Academy for Woolwich as they will be after June, 1898. If anyone will turn to the subjects for examination and syllabus in Appendix II. it will be seen that the standard and range of the optional and obligatory mathematics is a high and extended one, including hydrostatics, differential and integral calculus, and part of Newton's Principia. Taken in connexion with all the other subjects required—literary, linguistic, and scientific—the course of preparatory study must be deemed a severe one for youths of the ages of the competitors. Competitive examinations are the fad of the present day, and we do not see where their progressive development is to end. As it is they tend to rob youth of half its joys and to discourage all freshness of mind and independence of thought. No one surely wants to see the system carried to such an extent that successful army candidates are represented by myopic and neurotic pedants. That the young men going into our military and naval services—especially those competing for commissions in the scientific branches of the army—should be highly educated is undoubted; but we are by no means certain, from a physiological and hygienic point of view, that an intellectual strain can be sustained without risk of enfeebling—in the case of many growing lads, at any rate—the mental and physical powers alike. It is confessedly most difficult, however, to devise a course of study and an examination that shall afford a reliable competitive test. We are glad to notice that the tendency of the present day lies in the direction of a knowledge of mathematics, modern languages, and physical science as the best groundwork for an officer's career. With regard to the regulations for the medical examination of candidates for commissions in the army the authorities very properly suggest that a candidate should be thoroughly examined by a competent physician before commencing his course of study in order to discover the existence of any physical defect which would disqualify him for the army, and thus to save useless expense and the future mortification of rejection. The requirements, rules, and tests applicable to the medical examination of candidates for commissions in the army are very plainly and precisely given in Appendix I. of the Regulations for Woolwich, and there should not, in our opinion, be much difficulty in determining whether a candidate fulfils them or not. There is a table of physical equivalents showing the required correlation of age, height, weight, and girth of chest; the method of procedure to be pursued in ascertaining the height and measurement of chest; and the method to be used for testing the eyesight and standard of vision as well as the requirements in this respect which the candidate has to fulfil. A long list of additional points to be observed in the medical examination is also given. The great thing which a civil practitioner has to do in examining a candidate as to his physical fitness for military service is to proceed systematically to work on the exact lines that are laid down for the guidance of the army medical board in their examination which the candidate must finally pass successfully before he can be admitted into the military service.

Annotations.

"Ne quid nimis."

THE LONDON WATER BILLS.

AT a meeting of the London County Council on Tuesday last a somewhat warm discussion took place on the question of the acquirement and purchase of the London water companies' undertakings. The so-called famous "heads of agreement" which were drawn up by a competent and authoritative committee who were anxious for an early settlement of the question were not agreed to *nem. con.*, although these recommendations amounted to a compromise. That the council were not unanimous on the report submitted by the sub-committee, which was submitted for presentation to the Council as the main provision of an agreed Bill, was due to the action of Lord Onslow and his supporters. He said it was admitted all round that a Bill for the acquisition of the water companies ought to be introduced into Parliament, and that powers should be taken by the Council to pay for these undertakings under arrangement. Whilst accepting the first five heads of agreement proposed by the sub-committee, he wished to add: "that, subject to the Government passing an Act next session constituting a water authority for London, the Council's Bill shall be read as if such authority had been named in it instead of the Council, and that in the meantime the Government be requested to introduce a Bill for the purpose of dealing with the water-supply and to appoint a special commission to inquire into the relations between London and the outside areas, including the questions of extension or alteration of the present area of supply; and as to the severance of sources and works, if desirable in the interests of all parties, with power to prepare a scheme to effect such severance and to adjust the financial considerations involved." The amendment, however, was lost by a majority of eleven. The original amendment of Lord Onslow was then put by Mr. Holland, which provided for the introduction of a Bill on the lines of the compromise. This, however, was again lost, and in the end the whole of the committee's report was adopted. This amounts to a decision to go to Parliament again for power to purchase the undertakings of the eight metropolitan companies, and the balance of opinion of the members appears to be in favour of the London County Council being the new water authority. In other words, the Progressives carried the day, and Lord Onslow failed in his endeavour to frame the committee's recommendations on the lines of Lord James's Bill, which was dropped through "congestion of business" in the last session of Parliament.

BACTERIOLOGY AND THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

WE have more than once expressed the opinion that the time has come for the wider recognition of bacteriology as a subject of medical study, and we are conscious that its cultivation is fostered to a certain extent in most medical schools. But the desideratum is the establishment of such a course of practical study as will enable the medical practitioner to understand the bearings of bacteriology in relation to infectious diseases, enable him to prepare cultures of pathogenic microbes, and to differentiate them with accuracy. We believe that when Dr. Pavy's resolution on the subject, which has just been passed by the Fellows of the Royal College of Physicians of London, was first placed on the agenda a feeling akin to dismay was disseminated amongst those actively engaged in the teaching of medicine. The very notion that a special subject of study, involving delicacy of manipulation and equal delicacy in minute discrimination, was to be added to the curriculum, and possibly made the subject for a separate special examination at the hands of experts, must have rudely startled those who knew only too well the amount of the burden already borne by the medical student and the difficulty he apparently has (as judged by examination results) in adequately sustaining it. This feeling was so intense that it is confidently affirmed that had the College gone to the vote at the first meeting it would have refused Dr. Pavy his committee. Fortunately, for the credit of the College, we think, as well as for the cause of education, the adjournment of the question allowed a more sensible view to be taken of it, and the resolution was carried unanimously. No one gainsays the importance of the subject, which cannot be omitted by any teacher, biological or pathological; but that is not the question that the committee is asked to determine. It has to ascertain to what extent it is possible to introduce bacteriology into the curriculum in so far as its pursuit bears upon actual practice. It is not demanded that it shall be pursued with a thoroughness that will tend to convert every medical practitioner into a bacteriologist and flood our literature with the records of vain searches after germs in all possible varieties of disease. But it is requisite—and the need is being felt more strongly day by day—that no member of the medical profession should be ignorant of the practical methods of research, of the significance of pathogenic microbes, and of the means of protecting the human body from their invasion or antagonising the effect of their toxic products.

THE WORTH OF A CORONER'S INQUEST.

WE have before now in our columns called attention to useless and unsatisfactory inquests held frequently by non-medical coroners. The Founder of THE LANCET, the late Mr. Wakley, M.P., was well aware of this and did much to improve these inquiries, yet after fifty years we have many such inquiries held. We would ask, What is the use of an inquest without medical evidence and a post-mortem examination? We do not hesitate to say that an inquiry, a solemn inquiry, into the *cause* of death is a farce without a post-mortem examination unless the medical witness can testify of his own knowledge as to the probable cause of death. It would be better, if it is expense that the coroner wishes to avoid, not to hold the inquiry at all, trusting to the inquiry of his officer. No doubt many such inquiries are held now, but when there is an inquest by all means let us have it as complete as possible. An inquest lately held by the deputy coroner for Wigan falls under the category of useless. A youth seventeen years of age was seriously ill; he vomited, was delirious, had a high temperature, and suffered from severe pain at the lower end of the femur, with very little thickening of the bone and not much heat. Acute septic periostitis suggested itself, and he was recommended to be taken to the Wigan Infirmary, where he was admitted. Later in the day the symptoms became so urgent that the bone was cut down upon and trephined, but found to be healthy. Some time afterwards the delirium increased and convulsions set in, and the boy died. Dr. Milroy, the senior house surgeon, anxious to know the actual cause of death, or we would say the primary cause of death, sought for a post-mortem examination. On inquiry he found that there was some history of an injury at football a few days before; he communicated this fact to the coroner, who refused to order a post-mortem examination, for which a fee would have been paid, but took Dr. Milroy's evidence as to the patient's state on admission and as to the operation. Dr. Milroy also said no evidence was found of an injury that would account for death and he

could not certify the cause without a necropsy. The coroner then addressed the jury and said the question was, Could they come to a right decision on the evidence without having a post-mortem examination? If they did not feel justified in giving a verdict on that evidence without a post-mortem examination then they might order one. That was all he could tell them; but at the same time it seemed strange to him that the boy, a healthy boy, should leave home in good health, not complaining of anything, go to his work, return home injured, and a few days afterwards complain and be taken seriously ill and die, as stated, without the injury having anything to do with the cause of death. They learned that he had not been hurt at his work. The only injury he had received which they had heard of was the one in that football match, in which he was evidently hurt because he gave up playing and would not take part in the game again, and, in fact, had not played since. Whatever injury it may have caused to his leg he did not say at the time, but a few days after he complained and was taken seriously ill. It seemed to him that the primary cause of death was an injury received the day he was playing football. If they were satisfied that was so then, of course, they must return or record a verdict as one of "Accidental death," but if not satisfied they must order a post-mortem examination. The mother having informed the jury that a "professor of phrenology" some four years before had told her that her son would be killed at football, and that as a consequence she had forbidden him to play, they soon arrived at the conclusion that the deceased's death originated through the fall when playing football and returned a verdict of "Accidental death." Could anything be more unsatisfactory? The medical evidence showed no injury to the leg; this was clear ante mortem. What, then, did cause the death? Was it meningitis, or some internal injury, or had the playing of football anything to do with the death at all? Surely this kind of inquiry will bring its own reform. An inquiry by the procurator-fiscal is much more serviceable than an open inquest like this, and the true cause of death would be known. A medical coroner would have held no inquiry in a case like this without a thorough post-mortem examination. What encouragement is there for medical men to aid the authorities when such useless verdicts are arrived at?

A DEAF WORLD.

THE subject of Dr. J. H. Girdner's article in the *North American Review* for September, entitled "The Plague of City Noises," deserves more than a passing notice. Humanity—or at least that ever-swelling portion of it dwelling in crowded centres—is in danger of deafness. Our modern civilisation, admirable though it may be in the main, is too noisy. As Dr. Girdner puts it, "a vast amount of nerve-energy is expended on the sense of hearing and discriminating noises in a city like New York. Add to this the wear and tear, the jarring and actual pain produced on the sensorium by the endless roar in which we live, and you have a most potent factor in the production of that bane of modern city life—neurasthenia, or nervous prostration." Anyone who has listened to the hammering in a dockyard while some gigantic ironclad is under construction can readily understand why the workmen in general, but especially the riveters, should be so subject to deafness. Their internal ears, over-stimulated by the incessant and terrific noise, become first congested and eventually more or less seriously disorganised. The "wooden walls" of a past generation had one great advantage over their metal supplanters. The elastic oak deadened the sound of the hammers, and the artificers consequently escaped being deafened for life. Artillerymen are supposed to be more prone to deafness than their comrades of the line and cavalry, but we are not aware that the point has ever been determined statistically. At practice with heavy ordnance we believe it is customary to pad the ears with cotton wool, but surely some more scientific method for obviating the injurious effects of the concussion could be devised—some apparatus or sound buffer that would act by diffusing and calming the sound waves before they impinged on the delicate structures of the labyrinth. None but the deaf can tell what a disastrous thing it is to lose the sense of hearing completely. In some respects deafness is as bad as blindness, if not worse. A person totally unable to perceive sound becomes thereby incapable of social intercourse and is practically condemned to perpetual solitariness; whereas the blind can converse, hear all that is going on in their circle, and interchange thoughts with their friends. Complete deafness is, moreover, always accompanied by tinnitus aurium, which is one of the most distressing sensations in the world. The evil against which Dr. Girdner warns us, although scarcely as pressing as he would have us believe, is nevertheless a sufficiently serious one, and it behoves us to adopt remedial measures without delay. The latest champion of peace and quietness believes that much could be done by founding societies "after the pattern of the Society for the Prevention of Cruelty to Animals or the Gerry Society," on which charters and certain powers and responsibilities should be conferred by the Legislature. Each of these societies "should make a study of the noises of the city, and through its own powers and by advice and coöperation with the various city departments suppress such noises as are unnecessary and reduce those that are necessary to the minimum of disturbance." Amongst other sources of objectionable noise Dr. Girdner includes the—in his opinion—by no means harmless or necessary cat. He recommends that all cats should be taxed, like dogs, and that their owners should be compelled to retain them inside their houses night and day. In this respect, at all events, we fear that Dr. Girdner's aspirations are more than Utopian.

POISONING BY OYSTERS.

IN a recent number of the *Wiener Klinische Wochenschrift* there is recorded a fatal case of poisoning by oysters. There was no suspicion of previous sewage contamination and the cause of death was referred to a poison of the ptomaine group. Post-mortem examination revealed small hæmorrhages in the cerebellum, in portions of the spinal cord, and in the pleura and ileum, with enlargement of the spleen. It is suggested in our contemporary that in severe cases of poisoning from the ingestion of unwholesome fish the stomach should be washed out, the intestine irrigated, the bladder frequently emptied by the catheter, the patient at the same time being fed by means of the stomach pump and artificial respiration employed. Happily, in our temperate zone it is seldom that any ill-effects can be ascribed to the eating of oysters, although in tropical and sub-tropical areas bivalves which may one day be eaten with impunity at other times prove virulently poisonous. The ostrea edulis, the interesting mollusc which changes its sex several times in a season on our coasts, is never likely to get into popular disfavour, but the few mishaps that have been recorded may point to the need of consumers exercising some discrimination in the selection of oysters. The late Mr. Frank Buckland's advice on the subject of choosing an oyster still holds good. The shape of the shell should, he said, resemble the petal of a rose. It should be thin and "have an almost metallic ring, while the flesh should be white and firm and nut-like in taste." Mr. Buckland often averred that the worst oysters were those caught in French waters, which were as "thin and meagre as French pigs." The embryology of the oyster was a subject possessing great

attraction for Huxley, who some years before his death made numerous experiments on this subject, but discontinued them owing to the pressure of other matters.

THE CASE OF MRS. CASTLE.

IT should be quite understood that the Home Secretary ordered the release upon purely medical grounds of Mrs. Castle, the American lady who was recently convicted of theft. No question of kleptomania was discussed, for Mrs. Castle pleaded guilty. The Home Secretary afterwards received reports from Mr. Scott, the medical officer of Holloway Prison, Mr. Patmore, the medical officer of Wormwood Scrubs Prison, and Dr. Nicolson, late superintendent of Broadmoor Asylum and now Lord Chancellor's Visitor in Lunacy, on the convict's temperament and the state of her physical health, as a result of which he did not consider that it would be advisable to further detain her in prison.

"INSUSCEPTIBILITY" TO VACCINATION.

IN the last report of the medical officer of the Local Government Board it was stated that amongst 88,875 successive vaccinations by the officers of the Board, whether with humanised lymph or with calf lymph, no case of insusceptibility had been met with; that is to say, in no case of primary vaccination had the individual been vaccinated three times unsuccessfully. The statement has caused some expressions of astonishment, especially as it was accompanied by another to the effect that no less than 1983 certificates of insusceptibility had been granted by medical practitioners in England and Wales during the last year reported on. There is, therefore, some interest in noting what has been the result at other than Government public stations, where, presumably, the operation has been performed with perfectly fresh—that is, unstored—lymph. We now note that Mr. O. Lowsley, public vaccinator for Reading, recently announced to the Reading board of guardians that out of 14,000 children whom he had vaccinated he had "never found a case of insusceptibility." Although "insusceptibility" to vaccination is admitted by law it really becomes doubtful whether it has more than a legalised existence.

SICKNESS AND MORTALITY IN THE GERMAN NAVY.

THE average strength of the German Navy during the biennial period ending March 31st, 1893, was 17,888 of all ranks, the numbers afloat and ashore being respectively 9262 and 8626. The exemptions from duty for disease or accident amounted to 910 per 1000 of strength, each case remaining 13·2 days under treatment on an average, while the number of men constantly sick was equal to 34·2 per 1000. Infectious diseases accounted for nearly 7 per cent. of the total disability, inclusive of 65 cases of scarlet fever, 69 of measles, 8 of diphtheria, 36 of typhoid fever, and 2 of cholera. Paludal fevers caused 771 admissions in African waters, the ratio to the local morbidity from all causes being 420 per 1000, but elsewhere the incidence of these affections was inconsiderable. Out of every 1000 cases treated diseases of the respiratory organs (including phthisis pulmonalis) were responsible for 104·5, accidents for 190·7, venereal diseases for 107·4, and rheumatism for 15·1. Sunstroke occurred 23 times and a single case of scurvy was reported from a vessel cruising in the South Pacific. With regard to the venereal sick-roll it is worthy of note that the proportion of cases occurring in Eastern waters was three times higher than that given above. In this connexion Dr. H. Gros, the compiler of an interesting *résumé* of the official returns, makes the following observation. "The relative infrequency of these affections is remarkable. In all probability the morals of the German sailor are not superior to those of his congeners belonging to other nationalities. To what, then, are we to attribute his greater immunity? Is it to be ascribed to surveillance of prostitutes, to the retention of the men on board ship, or to the concealment of disease? It is impossible to say."[1] During the period there were 112 deaths, 70 at sea and 42 on land, the mortality being thus equal to 6·2 per 1000 per annum. No fewer than 35 of the fatalities afloat were caused by accidents, and 3 were due to suicide. Among the deaths on shore suicide was responsible for 4 and accidents for 7. The number of fatal cases from disease was as follows: tuberculosis, 22; pleurisy and pneumonia, 15; pyæmia, 3; typhoid fever, 3; paludal fever, 3; cholera, 2; diphtheria, 2; scarlet fever, 1; rheumatism, 1; and other diseases, 11. 847 men were permanently discharged in the course of the two years, more than half of them having less than three months' service. The loss under this head was consequently equal to 23·6 per 1000. It was due chiefly to visual defects, diseases of the locomotor apparatus, heart complaints, general debility, and affections of the ear. The invalids numbered 395 (11·0 per 1000), their disabilities being for the most part cardiac and locomotor, with hernia and tuberculosis in the second rank.

"CHANGES IN THE BRAINS OF THE NON-INSANE."

IN the recently issued volume of the *Edinburgh Hospital Reports* Dr. Robert Hutchison publishes a paper on this subject. It is obvious, as he says, that if the pathology of insanity is to be placed on a secure basis the appearances presented by the cortical cells in a normal human brain must be first studied. And by normal is here meant average and not ideal, for the tendency has been too much towards setting on a pinnacle a nerve cell which corresponds to the notions of what a healthy nerve cell should be and making it a standard. The notions of what constitutes such a nerve cell are derived from various sources, but chiefly perhaps from the examinations of the cells in the brains of lower animals, and such a nerve cell obviously is too high a standard with which to compare the cells in the brains of those who have died from disease—not necessarily in those cells themselves—and the alienist has been too ready to assume that any abnormal changes which he finds in the cortical cells after death must have had some causal connexion with the mental state of the patient during life. Such a deduction is of course unjustifiable unless it can be shown that such changes are only present with the abnormal mental state. The only way to correct erroneous impressions as to what a normal cell is will be to examine a series of brains of persons dying from general diseases who have never suffered from insanity. Such an investigation Dr. Hutchison has undertaken for one method—viz., the fresh method of Bevan Lewis. The method used was as follows. The portion of the brain examined in each case was a part of a convolution from the left motor area, the left ascending frontal convolution being most usually selected, and this was treated in the usual way. Fifty brains were examined, and the most striking fact was the frequency with which pathological changes occurred. Pigmentary degeneration was by far the most frequent of these changes, and in nearly half the cases there was distinct evidence of excess of pigment. Typical granular degeneration was not often found. True vacuolation of cells was also found, but Dr. Hutchison thinks that the nucleoli, which stain faintly by Bevan Lewis's method, have in many instances been mistaken for vacuoles. Changes in the neuroglia did not appear to occur so frequently in the sane as in the insane, and marked hypertrophy of "spider"

[1] Archives de Médecine Navale et Coloniale, October, 1896.

cells has not been encountered. In no case were any changes found similar to those occurring in general paralysis. Speaking generally the changes found in the brain cells of the sane are the same in kind as those found in the cells of the insane, although widely different in degree. The various influences which might artificially produce changes in the cells are also considered. The method might produce some of the changes, but only a few, and these unimportant. The time after death at which the examination was made might also be regarded as of importance, but in sections made at once, and in others two or three days later, the brain being simply kept cool and moist, no difference could be detected. The most natural explanation of the changes is probably that they are secondary to disease elsewhere, and may be analogous to changes occurring in, e.g., liver cells in various morbid conditions of other organs. It will be recognised that this paper is a record of most important and interesting work. It raises the whole question whether there is a histological basis for the pathology of insanity. If experiments with other methods furnish similar results to those obtained by Dr. Hutchison with Bevan Lewis's, it will be necessary to show that the morbid changes in the cells occur with much greater frequency and intensity in the brains of the insane than they do in those of the sane, if it is to be shown that there is such a histological basis for insanity.

THE LATE PROFESSOR H. NEWELL MARTIN.

THE death of Professor H. Newell Martin, M.D., D.Sc., F.R.S., which occurred at Burley-in-Wharfedale, Yorkshire, on Oct. 27th, as announced in our columns last week, was a premature close of a very promising career. Dr. Martin was a distinguished biologist, whose name was well known to English readers from his association with the late Professor Huxley in the authorship of the Manual of Practical Instruction in Elementary Biology, published in 1875. He studied at Cambridge University and was for some time a Fellow of Christ's College; he was also a Doctor of Science of London University. The greater part of his working life was, however, passed in America, where he for more than twenty years held the appointment of Professor of Biology at the Johns Hopkins University, Baltimore. While in America he wrote a work called "The Human Body," as well as several physiological treatises which obtained a wide circulation. He did some valuable original work, and especially he discovered a method of maintaining the circulation artificially through the mammalian heart after its separation from the body, so that the effect of various conditions and the action of various drugs upon it could be ascertained without the complication which usually arises from its connexion with the central nervous system. Dr. Martin was much beloved by all who knew him, and all physiologists will lament the early death of such a gifted and promising investigator. At the time of his death he was only forty-eight years of age. He had been residing at Burley-in-Wharfedale for several months in a very bad state of health.

INSURANCE OF INFANTS' LIVES.

EARLY in August a medical practitioner in Eastbourne was called to attend an infant aged seven months. He found what appeared to be a diminutive living, or rather dying, skeleton, filthy, covered with vermin, and quite beyond the hope of recovery by medical treatment. Other witnesses have since added to the history of this case detailed explanations of deliberate neglect for which the parents had even been sent to prison. Nevertheless, an insurance agent regularly received a weekly dole of twopence, which appears as the sole suggestion of parental interest, and which would one day, it was expected, reward that interest with a solatium of £5. We have here but one more example illustrating the connexion which, whether natural or no, does certainly exist between this system of infant life insurance among the poor and infant mortality under the most cruel conditions. The question how this connexion can be most effectually severed has not yet found a practical answer. Infant insurance is not, after all, a domestic necessity. If it be adopted as a matter of convenience no objection to it can be raised provided that effectual means be used to prevent its criminal abuse, but this condition is essential. The system in force in mutual benefit societies is in some degree guarded by the intercourse existing among their members and by the fact that insurances as a rule are not on an extravagant scale, and it has come to be regarded as in some sort a model. It by no means follows that even this arrangement is incapable of improvement, and it is certainly open to question whether the present system of money payment on the death of an insured child is that best calculated to effect the professed purpose of the insurance. In the case of sickness a different plan is followed. The small weekly contribution does not bring in a return in money to defray the expense of treatment, but it guarantees the professional aid of a practitioner. Why should not the cost of burial be defrayed on the same principle? It would probably cost less to employ the services of an undertaker than to disburse a sum which must often be in excess of the actual requirements of burial, and we cannot imagine any method which would more effectually remove from poor and unscrupulous parents the temptation to make away with children for the sake of a burial policy.

LITERATURE IN EAST LONDON.

THERE is a hackneyed quotation from a sacred author to the effect that the making of books is without end, but in no age and in no country, perhaps, does the quotation apply so much as it does in England at the present time. An increase in the number of books implies an increase in the number of people who read them, and providing the books are of the right sort the effect on the readers cannot but in every way result in the health of the nation to which they belong, mentally, morally, and physically. It is gratifying to learn, therefore, that the Free Library at Bethnal-green, which owes much of its success to the hard work of the secretary and librarian, Mr. G. F. Helcken, is greatly appreciated by the dwellers in East London, and that not only are fiction and light literature in demand, but the works of Ruskin, Carlyle, and other English classical authors are in constant request. Started in 1876 with a few volumes, the books in the Bethnal-green Free Library, we learn, now number some 30,000, a total to which Dominie Sampson could have applied the word "P-r-o-d-i-g-i-o-u-s" with all truth. While, however, congratulating the free library movement upon its success we would earnestly enter a plea for the yet further extension of its work, not so much by increasing the number of volumes in any particular library as by teaching the people how to get the most good out of the facilities which are already provided. This can only be done by means of lectures similar to those which have been delivered by that master of prose, Mr. Ruskin, and which are to be found under the title, Of Kings' Treasures in Sesame and Lilies.

MERCURIALISM FROM CYANIDE GAUZE DRESSING.

AN interesting and important paper upon the solubility of the double cyanide of zinc and mercury used in the form of an antiseptic gauze was recently read by Mr. P. H. Marsden, F.C.S., before the Liverpool Chemists' Association. The investigation had its origin in a case of excision of a large carbuncle of the back and salivation

resulting from the application of cyanide gauze dressing, which was described by Mr. W. Thelwall Thomas of the Royal Infirmary, Liverpool, in THE LANCET of Oct. 24th. The results of Mr. Marsden's investigation show that 3·65 per cent. of the double cyanide is dissolved out by water at normal temperature, while in hot water 7 per cent. is extracted. With a large volume of water maintained between 100° and 110°F. the loss amounted to 62 per cent. In the case of borax Mr. Marsden found that 26·3 per cent. was dissolved out by the solution at 170°F. Carbolic lotion would also appear to have a solvent effect upon the double cyanide since it proved to dissolve out 10·9 per cent. When, however, the cyanide is dealt with in small quantities and in a high state of dilution no less than between 40 and 49 per cent. is dissolved out by carbolic lotion. The double cyanide consists, as Professor Dunstan has shown, of about 36 per cent. at most of mercuric cyanide occluded in the zinc salt, and subsequent investigation has shown that "prolonged contact with cold water leads to the gradual removal of the mercuric salt." Boiling water dissolves the mercuric cyanide more rapidly, although there is evidence to show that the double cyanide is a true chemical compound; but it appears to suffer decomposition to a greater or less extent depending upon the relative amount of water present. The fact, as the above investigation shows, that the double cyanide of mercury and zinc is soluble to an important extent in borax and carbolic lotion, as well as in warm water—all of which are, of course, employed in connexion with the dressing of wounds—should place surgeons on their guard when they have occasion to use this otherwise excellent antiseptic.

THE "NERVOSITY" OF ALFRED DE MUSSET.

M. A. BRISSON has published some notes in the *Temps* on the "nervosity" of Alfred de Musset, which, according to the poet's housekeeper, exceeded anything that can be imagined. Musset possessed the gift of second sight. He could divine the thoughts of his friends before they opened their mouths to speak to him. He was haunted by presentiments, not one of which failed in fulfilment. One evening as he was passing under the arcade of the Louvre he heard a voice moaning, "They are killing me in the Rue de Chabannais." Hastening to the spot he met men bearing a corpse which they had just taken up. M. Arago, who was present, vouches for the truth of this incident. On another occasion, says the housekeeper, "he called me up at about 3 o'clock in the morning. I found him sitting up in bed with a haggard expression. Pointing to a corner of the room he exclaimed, 'Look at that d——d body-snatcher over there; he won't go away!' I did my best to pacify him, but it was impossible. 'I tell you he is there,' he insisted. 'He has come to fetch me, or else there is some other person dead in the house.' The following morning I learned that one of our neighbours had actually died at the very moment when M. de Musset experienced this horrible hallucination. The following case is still more extraordinary. About a week before his death, while he was bedridden and extremely weak, I was watching beside his couch with my sister. Suddenly he raised himself. We tried to stop him, but he succeeded in starting for the bell-rope, which was hung on the far side of the fireplace. Before he could reach half-way he collapsed into a chair and was merely able to extend his arm towards the rope. What follows I swear to you is not an invention, but true in every respect, and my sister saw it as well as I. We saw the bell-rope distinctly shaking as though a hand were pulling it, and our niece, who was in the kitchen at the other end of the flat, came running in to ask who was ringing. M. Brisson was unable to disguise from the venerable Adèle his opinion that her concluding anecdote had a chimerical sound, whereupon the dame lowering her voice, as though some internal force were compelling her to the avowal, said: 'Moreover, I have made the tables turn and he has spoken to me!'"

THE TREATMENT OF BURNS.

WE publish in another column an article upon a method of treating the surfaces of burns. The chief merit of Mr. Benson's ingenuity lies in the facts that the granulations are not broken down at each dressing and that they are not stimulated to overgrowth by being kept unduly moist (vide p. 1373). The freedom from pain in the use of the "antiseptic cage" is also no small advantage. The method deserves to be tried on an extensive scale, and will, we do not doubt, be found to hasten the healing of cases of severe burns the present treatment of which is very far from satisfactory.

STREET NOISES.

THE subject of the annoyance caused by organs, sellers of newspapers, &c., is, we are glad to see, forming the substance of a correspondence in the *Times*. Mr. Chas. Fox, hon. sec. of the Association for the Suppression of Street Noises, writes to the *Times* of the 9th inst., saying that the association is determined to test the powers of the Police Act, which imposes penalties on those who use noisy instruments. Piano organs are certainly "noisy instruments"; whether a voice like a fog-horn or a steam whistle comes under this category we know not, but it certainly should do so. It is not as if it were necessary to yell to sell papers, for plenty of newspaper sellers never do so and yet drive a good trade. We wish Mr. Fox and his society every success. No one objects to the sale of papers, Sunday or otherwise; but the hideous noises which at present accompany the sale are unbearable.

A COUNTY COUNCIL ON ISOLATION HOSPITALS.

AN important circular has just been issued by the sanitary committee of the East Sussex County Council as the result of an expression of opinion that "the time has arrived when isolation hospitals should be established throughout the administrative county where no adequate provision already exists." A scheme is put forward to meet and deal with cases of infectious disease of the ordinary type—i.e., excluding small-pox. The subject has had especial attention paid to it of late, and as a result of inquiries hospitals are recommended to be provided in, or near, Rye, Battle, Ticehurst, Uckfield, and Cuckfield, and to serve the districts of no less than fourteen authorities. Two existing hospitals, it is suggested (at Eastbourne and Lewes), might take in patients from districts under other authorities. It is advised, too, that additional or new accommodation is necessary at Newhaven and Hastings. Under this scheme the administrative county would be covered by fourteen infectious hospitals, and it is suggested that terms might be arranged for the part use of that belonging to the county borough of Brighton. As regards small-pox, it is considered that two permanent hospitals—one near Battle and the other near Uckfield—each serving a fifteen or twenty miles' radius, would go far towards meeting the requirements of the county. Temporary accommodation in the meanwhile, it is pointed out, is expensive and inconvenient. This is wise action on the part of the county council, and the words of the circular are worth quoting: "Each sanitary authority has its own undivided responsibility, and the want of such provision by one or more of them does not exonerate any of the others. ..... There are few, if any, parts of a county now so largely residential, and every year becoming more so, that are not interested in seeing that requisite measures

are taken for dealing with all cases of infectious diseases arising in their own and adjoining districts." Information is asked for from the rural councils, and it will be interesting to observe the success of a systematic and courageous method of organising preventive measures such as this one of the East Sussex County Council.

THE CAPE GOVERNMENT AND PROFESSOR KOCH'S MISSION.

IT is announced that Professor R. Koch is on his way to the Cape, the Cape Government having invited him to inquire into the outbreak of rinderpest in the colony. His investigations will doubtless be characterised by the care and thoroughness with which his work is always performed. Yet we cannot help thinking that one of the leading colonies of the empire should have been able to select an investigator from the ranks of British bacteriologists.

A NON-MEDICAL CORONER ON HYDROPHOBIA.

ON Nov. 3rd an inquest was held by the Bristol city coroner upon the body of Thomas Scammell, aged sixty-one years, who committed suicide by hanging himself. According to the report in the local press Scammell had been bitten by a dog *fifteen years ago*, and ever since during the "dog days" had suffered from the effects of the bite. The coroner "said that it was a most distressing case and was largely a result of that terrible disease hydrophobia." Now supposing the coroner to have been properly reported, we would ask what justification had he for assuming that the unfortunate man's suicide was largely a result of hydrophobia. There was no evidence to show that he had ever had hydrophobia at all. The jury, we are glad to see, simply returned a verdict that the deceased had hanged himself while of unsound mind, which is a rational verdict; but that a coroner should make such an utterance on a medical question as—if the report be correct—this one appears to have done is only one more argument for the appointment of medical men to this office.

THE LAST OF QUARANTINE IN THE UNITED KINGDOM.

ON the 9th inst. the Public Health Act, 1896, came into operation, and that Act finally abolished the last remnant of quarantine which was maintained in this country against yellow fever and plague in order to secure our commerce against unnecessary restrictions in foreign ports. In consequence of this change the duty of preventing and controlling yellow fever and plague in ports of the United Kingdom has been transferred from the Privy Council to the Local Government Boards of the three divisions of the kingdom, and on the 9th inst. the Local Government Board for England and Wales issued an order embodying the regulations which they have laid down with regard to yellow fever and plague, and also as to cholera, all preventive action as to the two former diseases being placed on much the same footing as that which has been so successful in the case of cholera. We anticipate no difficulty with foreign nations on account of the change, for they have gradually come to see that our method of dealing with cholera at our ports is, to say the least, as effectual as theirs, and it has long been notorious that unless ships presumed to be infected with either yellow fever or plague happened to select the Solent for purposes of arrival the ordinary port sanitary authorities would deal with the matter, and, indeed, have done so as regards yellow fever. In the above heading we have referred only to the United Kingdom. We wish that we could have added that the same abandonment of antiquated forms of restrictions for health purposes had also been effected as regards those Crown colonies of the Mediterranean for which the advisers to the Crown are responsible. But we trust the time will soon come when the local legislators and counsellors of those colonies will have learnt that real measures for the prevention of disease lie in sanitary improvements, and that trust in quarantine restrictions does away with the strongest incentive to expenditure in the promotion of measures of public health.

THE HEALTH OF SIR WILLIAM MACCORMAC.

SIR WILLIAM MACCORMAC'S condition has, on the whole, improved during the past week. He has decidedly gained strength and takes more nourishment. The temperature also shows some improvement and the lung has further cleared up; all of which points to progress in the right direction.

THE EDINBURGH UNIVERSITY CLUB.

THE members of this club gathered in great force on Wednesday evening under the presidency of Dr. Conan Doyle. The feature of the evening was a fine strong speech from the chairman on the qualities of the Edinburgh University as a parent—somewhat stern in character and discipline, but with all the more advantage to her *alumni* when they came to the duties of life.

MUNICIPAL HONOURS TO MEDICAL MEN.

LAST year we had to record a considerable falling off in the number of those members of the profession who had been chosen by their fellow-townsmen to preside over their interests from the mayoral chair. We are happy to see, therefore, that this year the number of medical men who have been elected or re-elected as mayors has increased. The following is the list of which we have been notified: Mr. Henry Grey-Edwards, B.A. Dubl., M.D., M.B., B.Ch. (Bangor); Alderman J. A. Hosker, M.R.C.S. Eng. (Bournemouth); Mr. R. A. Prichard, L.R.C.P. Edin., and L.M., M.R.C.S. Eng. (Conway); Mr. Samuel Evans, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A. (Harwich); Mr. T. W. Thursfield, M.D. Aberd., F.R.C.P. Lond., M.R.C.P. Edin., M.R.C.S. Eng. (Leamington Spa); Mr. J. Oliver, M.R.C.P. Edin., L.S.A. (Maidstone); Mr. G. H. Pollard, M.D. Edin., C.M. (Southport); G. R. Cundell, M.D. Durh., M.R.C.S. Eng., L.S.A. (Richmond, Surrey).

SHELTERS IN LONDON.

THE need of adequate accommodation for poor persons during the disinfection of their rooms has long been recognised, and the Public Health (London) Act, 1891, made it obligatory on London sanitary authorities to make such provision. Much difference of opinion, however, has been expressed as to the character of the accommodation which was needed, and hence while some authorities have either erected a specially designed building with suitable day and sleeping rooms and with ample arrangements for bathing, other authorities have not gone beyond providing a few rooms that could be used only by day and not furnished with baths. But beyond this there are certain authorities—who, we hope, will not be long before they abandon their disregard of public convenience—who have not done more than instruct their officers to hire rooms when they are required. The vestry of St. Pancras are, properly, not altogether satisfied with the arrangements they have made, inasmuch as they they have not provided any sleeping rooms for the use of the poor who are thus temporarily deprived of their rooms; they have therefore instructed their medical officer of health to ascertain for their information the nature of the provision which has been made in other districts. Dr. Sykes has now presented them with a report which contains useful information and which will no doubt

encourage them to supply the rooms which their own shelter lacks. In this report is indicated the amount of use which has been made of existing shelters in St. Pancras and elsewhere. It cannot be too strongly pointed out that two conditions are required to ensure that a shelter shall serve the purpose for which it is intended—the one is that the poor shall find within it all that is needed for their comfort and convenience during the one or two days they may have to occupy it, and the other is that they shall learn by experience that their temporary occupation of the shelter is beneficial to themselves. The latter knowledge can only be gained as the result of some years of experience, and a sanitary authority must not be disappointed if for the first few years little appreciation is shown of the efforts they have made. It is not many years ago that much difficulty was experienced in inducing the poor to make use of hospitals for infectious disease. The difficulty which now occurs is when there is want of accommodation for their reception into the hospitals. It will eventually be the same with shelters, and sanitary authorities will do well in taking this lesson to heart.

NURSING IN RURAL DISTRICTS.

A CONFERENCE, under the auspices of the Council of County Nursing Associations, will be held, by kind permission of the Duchess of Sutherland, at Stafford House, St. James's, S.W., on Tuesday, Nov. 17th, at 2 30 P.M. The Earl of Winchilsea will preside, and among the subjects for discussion will be the establishment of a centre in London where information on rural nursing throughout Great Britain may be obtained and a registry of county nurses in connexion with it, and the best means of securing, as far as possible, uniformity in the working of county nursing associations throughout the country.

THE USE OF FORMALIN FOR THE PRESERVATION OF MUSEUM SPECIMENS.

THE preservation of colour in museum specimens has hitherto been a great difficulty, and the various methods which have been used can hardly be described as successful. The use of formalin seems to promise success, if we may judge from the specimens exhibited at the Pathological Society of London on Nov. 3rd by Dr. Kanthack and Mr. E. H. Shaw. They had used two methods, the one described by Jores and the other described by Kaiserling. For the actual details of the method reference must be made either to the reprint of the paper read before the society or to the original papers.[1] The specimens exhibited had been mounted for some months and included a sarcoma of the liver, a broncho-pneumonic lung, a nutmeg liver, a granular kidney, and a specimen of fat necrosis, all of which had preserved their colour most satisfactorily, and we must now wait to see what effect time has on these specimens.

THE METROPOLITAN WATER-SUPPLY.

THE condition of the water supplied to London during the month of September appears to have been with a few exceptions beyond reproach. Thus Dr. Frankland reports that all the Thames-derived waters were of excellent chemical quality for dietetic use and, with one exception, also of excellent bacterial quality. On one occasion a sample of the Southwark Company's water proved to be absolutely sterile, and the same was the case with one of the samples taken from a filter well of the New River supply. The water taken from the Lea at Angel-road on Sept. 11th was turbid and of a deep yellow in colour. As might be expected, it proved to be of bad chemical and very bad bacterial quality, "but after *efficient* filtration it was delivered in excellent chemical and bacterial condition." The italics are ours, as, of course, since the filtration was efficient no other result could have been expected. The deep well waters of the Colne Valley Company's water contained a somewhat large proportion of organic matter, and the water of the wells of the Tottenham and East London Company's was slightly turbid from suspended particles of oxide of iron and chalk. The report of the company's chemists, Mr. Crookes and Mr. Dewar, states that, "in spite of the fact that the organic impurities in a river water are likely to be much higher in a dull, wet season than in a bright, dry one, the purification resulting from large storage or impounding reservoirs combined with filtration is so effectual that the influence of the very exceptionally wet and sunless month is scarcely to be noticed, the organic carbon, which may be regarded as the measure of organic matter present, being only increased in the third place of decimals." We yet await, however, the views of these chemists on the results obtained and recently published by the London County Council's chemists with samples of water drawn in the winter 1894–95, when it was shown that suspended matter, and, of course, organisms, had escaped both the processes of filtration and storage, in spite of which the official reports were satisfactory.

"RELIGION" AND QUACKERY.

EVERYONE must have remarked to what a degree the columns of the so-called "religious press" are open to advertisements of quackery. A page of the *Methodist Times* lies before us entirely devoted to the puffing of a "Professor" Hern, who is described as a "specialist" in the cure of "hopeless" cases and so-called "incurable diseases." He has effected astounding cures of—here follows a list of forty-six diseases and symptoms, including as one item "all fevers." The specialist permits no drug, "but the symptoms which are exhibited by each sufferer are specially treated." Professor Hern, of course, has the usual testimonials from ministers. One writes, "Mr. Hern is a member and trustworthy." Another, "Mr. Hern is a member of our church, and beloved by all who know him." In addition Mr. Hern prints a number of testimonials from grateful patients. One begins thus, "I have great pleasure in certifying to my complete cure under the treatment of Mr. Hern of the very painful and serious ailments under which I formerly suffered. I had what the physicians termed 'intrepid heart.'" This form of morbus cordis is quite new to us. Another gentleman, and this shows very well the bent of mind of those who consult Mr. Hern, says: "I have tried several doctors, herbalists, and electric belts." Professor Hern is not alone in his glory, for on the preceding page are advertisements of two quack medicines, one of which is "the only real specific for liver troubles." Of course, this sort of thing will never be stopped, but such advertisers ought to be made to contribute more largely to the revenue. Any advertisement of a quack medicine or treatment ought to pay a tax of an equal amount to that which the newspaper charges for its insertion. In the reprint of the *Times* for Nov. 9th, 1796, nearly half the front page consists of advertisements of this kind. We suppose the thing has always existed and always will, for fools abound.

SOME HINDRANCES TO EDUCATION.

THE October number of *Pediatrics*, a journal devoted, as its name suggests, to the study of children's diseases, contains a short article on the connexion between psychology and some physical defects of childhood and the bearing of this relationship on education. The good service rendered

[1] Jores: Centralblatt für Allgemeinen Pathologie und Pathologische Anatomie, 1896, No. 4; and Kaiserling: Berliner Klinische Wochenschrift, Aug. 31st, 1896.

by school teachers in observing the mental peculiarities of the children under their care is illustrated by instructive instances. Among these may be noticed that of a schoolmistress, who noted, without professing to explain, the inability of a large number of boys to spell correctly some of the simplest words. It appears to have been clear that this result was not attributable to mere ignorance, but rather to the wide prevalence of a degree of verbal deafness. If this explanation be correct it is evident that deafness in childhood and youth is much more common than has hitherto been suspected. Other cases referred to suggest the conjunction with deafness of a form of verbal amnesia, words being occasionally heard and even pronounced by a mute under exceptional conditions, but as surely forgotten. On the strength of these and other like observations the writer proposes the addition of special schools to the existing educational system for the purpose of meeting the difficulties of such cases. Probably a reform so radical is not sufficiently justified by the necessities of the case, and the responsibilities and expenses connected with gratuitous instruction are in all countries heavy enough already. What these investigations, crude though they be, do illustrate is the facility in observing many minor, but still significant, defects in childhood which belongs to the school teacher and the advantage of using this power as a means, not only of directing education, but roughly diagnosing physical or mental failings at an early stage while they are still in many cases well within the reach of remedial treatment.

COTTAGE SANITATION IN RURAL DISTRICTS.

THE Royal Agricultural Society of England have issued a second edition of their illustrated pamphlet on "Cottage Sanitation in Rural Districts." The work, which originally appeared in the society's journal, vol. III., Part 4, 1892, was written by Dr. H. Maclean Wilson, with the aid and counsel of Mr. T. Pridgin Teale, F.R.S., Dr. Spottiswoode Cameron, and other well-known sanitary experts. The aim of the paper, as stated in Mr. Teale's preface to the first edition, is to "make suggestions of as simple a kind as will meet the necessity of each case, and to set forth a minimum of sanitary requirement such as may reasonably be attained in every country village." The new edition has been thoroughly revised by the author, Dr. Maclean Wilson, with the assistance of the same gentlemen who took part in the production of the original essay, and it includes the changes and improvements suggested by the most recent experience. It deals with the sanitary defects of rural cottages, with appropriate remedies under the heads of the situation, construction, and condition of the house; the disposal of all kinds of house refuse; the water-supply, including spring water, surface water, wells, rainwater, and the treatment of impure water; and the habits of the inmates such as inattention to personal cleanliness, discomfort from clothes-washing, overcrowding, and the storage of food, &c. We are informed by the secretary of the Royal Agricultural Society of England that the pamphlet can be obtained at 13, Hanover-square at the rate of 12*s.* 6*d.* per 100, 2*s.* per dozen, or 3*d.* for a single copy.

THE annual dinner of the staff and the past and present students of the Dental Hospital of London will be held on Saturday, Dec. 5th, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. R. H. Woodhouse, M.R.C.S.Eng., L.S.A., L.D.S. Gentlemen either now or formerly connected with the hospital or medical school, who may through inadvertence not have received special notice and who may desire to be present, are requested to communicate with the Dean at the Dental Hospital, 40, Leicester-square.

AT a meeting of the Neurological Society, held at the National Hospital, Queen-square, on Thursday, Nov. 5th, it was announced by the President, Dr. Alexander Hill, that the council had unanimously decided to found a Hughlings Jackson lectureship, and he was happy to say he believed that the whole medical profession would welcome this and the further announcement that Dr. Hughlings Jackson had kindly consented to give the first lecture. We understand that Dr. Colman was the originator of this happy idea.

WE desire to remind our readers that the annual meeting of the Fellows and Members of the Royal College of Surgeons of England will take place at the College on Thursday next, Nov. 19th, at 3 P.M. At the present juncture in the affairs of this corporation it is very important that no abatement of interest on the part of its Members should be shown, and we trust that there will be a good attendance.

AT the personal request of the Prince Regent of Bavaria Professor Max von Pettenkofer has consented to fill the chair at the Academy of Science of Bavaria and to act as Keeper of the State Scientific Collection for a further term of three years. The Prince Regent has conferred upon him the title of "Excellency."

THE Medico-Psychological Association of Great Britain and Ireland will hold an examination in December on the subjects of their certificate of Psychological Medicine. Intending candidates should make early application to the Registrar, Dr. Spence, Burntwood Asylum, near Lichfield.

THE REPORT OF THE ROYAL COMMISSION ON VACCINATION.

(*Continued from p. 1253.*)

THE ANTI-VACCINATION ATTITUDE.

IT may be safely asserted that no medical question has ever been subjected to an investigation more exhaustive and elaborate than that carried out by this Commission. The membership of the Commission was not confined to medical men; they formed only a minority. And so far as medical prejudice in favour of vaccination may be alleged, the minority was the smaller by the inclusion of Dr. Collins. The Commission was presided over by a chairman so distinguished as Lord Herschell, a Lord High Chancellor of England. It included other lawyers, Members of Parliament drawn from the three recognised parties of the country, and the chairman of the Metropolitan Asylums Board. Among the medical members was Mr. Jonathan Hutchinson, who had already done far more than anyone else in this country to prove that conveyance of syphilis by humanised lymph is not an impossibility. In selecting reporters to inquire into outbreaks of small-pox occurring here and there in the country in the course of the seven years the Commission did not call in any of the medical inspectors of the Local Government Board, but chose men altogether independent of that body—Dr. Sidney Coupland, Dr. A. P. Luff, and Dr. T. D. Savill. In Section 84 of the statement of dissent Dr. Collins and Mr. Picton express their "regret that owing to the reports from Dewsbury, Warrington, and Leicester having been made by medical men selected by the Commission opportunity for examination upon them has been precluded." What would the dissentients have had here? We wonder whether when these reporters were being appointed Dr. Collins or Mr. Picton had any better scheme to offer, and, if so, what that scheme could possibly be. The distinguished ability of the tribunal is no less manifest than its broad, impartial, and representative character, and the industry and patience with which its task has been performed.

In criticism of the Commissioners Dr. Collins and Mr. Picton

say: "We venture to think that the report of our colleagues, in the preparation of many portions of which we have borne our part, has approached the consideration of the behaviour of small-pox and the means of preventing it too exclusively from the standpoint of vaccination." In measuring the value of this criticism it is necessary to have regard to the particular questions submitted by Parliament for the consideration of the Commission. They were as follow:—

1. The effect of vaccination in reducing the prevalence of, and mortality from, small-pox.
2. What means, other than vaccination, can be used for diminishing the prevalence of small-pox; and how far such means could be relied on in place of vaccination.
3. The objections made to vaccination on the ground of injurious effects alleged to result therefrom; and the nature and extent of any injurious effects which do, in fact, so result.
4. Whether any, and, if so, what, means should be adopted for preventing or lessening the ill effects, if any, resulting from vaccination; and whether, and, if so, by what means, vaccination with animal vaccine should be further facilitated as a part of public vaccination.
5. Whether any alterations should be made in the arrangements and proceedings for securing the performance of vaccination, and, in particular, in the provisions of the Vaccination Acts with respect to prosecutions for non-compliance with the law.

In view of these questions, and in view of the very plain fact that the subject of the inquiry *was* vaccination, it is not easy to see how the Commissioners could have approached it in any other fashion than from the standpoint of vaccination. Looking to the witnesses that they heard it might almost, indeed, be argued that they had approached it from the standpoint of anti-vaccination.

It has not been the habit of THE LANCET to occupy much of its space in exposing, for the instruction or amusement of its readers, the fallacies and sophistries of anti-vaccination agitators, yet when it comes to be a question of altering the law of the country it may not be without use to indicate, by a citation of undeniable facts, how utterly hopeless it is for Parliament to enter on the task of endeavouring to satisfy, by any reasonable concessions, the leaders of the crusade. The object of legislation with regard to this aspect of the question must be, not to straighten out the mental twists which distinguish typical cranks in whatever direction their energies may be directed, but to detach from them the followers whom they succeed in misleading. Most of what we are about to refer to is in itself of not the slightest consequence and is useful only for the purpose stated.

In August, 1887, Mr. William Tebb, the President of the Anti-Vaccination Society, wrote to Mr. Baden Powell, M.P., asking whether he would propose a Royal Commission. The reply was unfavourable. Mr. Tebb afterwards wrote to many other Members of Parliament with varying success, and the journal of the society published the replies and called on its friends to assist Mr. Tebb. He got assistance, amongst others, from the secretary of the Birmingham League, who communicated with the Birmingham Members of Parliament. One of these — Mr. George Kynoch — was favourable to an inquiry, but doubted "whether any good would be done if the decision should be against the anti-vaccinators." In May, 1888, the *Vaccination Inquirer* wrote that "the strongest opposition to inquiry will proceed from the official medical ring," but that for its own part it had "no apprehension of an adverse issue," and that "any possible commission must contain a fair proportion of anti-vaccinists." At last, on April 5th, 1889, Mr. Picton, M.P. for Leicester, ventured to make the motion which had been so carefully prepared for and canvassed for by the anti-vaccination party and their organ, the *Vaccination Inquirer*. He asked for a Royal Commission, and the request was at once agreed to by the Government and the House of Commons *nemine contradicente*. Mr. Arthur O'Connor, who had all along sympathised with the movement, declared that it would be hard to exaggerate the gratitude due to Mr. Picton, and Mr. Cremer, who had already voted against bonuses to public vaccinators, rejoiced that the Government had at last seen the necessity of instituting an inquiry. We can imagine the cries of indignation that would have arisen from the anti-vaccination camp had the motion of Mr. Picton been rejected after all the organised efforts that had been made to get it well supported in the House. We can imagine this, but certainly no one possibly could have imagined the amazement and dismay with which the anti-vaccinationists received the news that their spokesman's request for a Commission had been acceded to. The *Vaccination Inquirer* "did not anticipate the sudden concession" and wrote thus regarding it: "Let us be under no illusion. This Commission is not designed for our advantage. ..... It is intended to afford ground for strengthening the law, which is falling into desuetude and contempt in Leicester and other centres of enlightenment. Public opinion adverse to vaccination is rapidly forming. ..... To endeavour, if possible, to check this development is the purpose of the Commission." When they were agitating for a Commission they seem to have done so merely for the sake of agitation and without either desire or expectation that a Commission would be granted. At that time, therefore, they had "no apprehension of an adverse issue." Now, however, Mr. Picton's motion having been unexpectedly agreed to, "we are assured in Parliament and in the press that the Commission can only issue in the utter confusion of the foolish and ignorant folk who have been misled into questioning and rejecting the benefits of the greatest of medical discoveries." When they loudly demanded a Commission at the same time that they looked for no Commission, they pretended to believe that "the strongest opposition to inquiry will proceed from the official medical ring." So soon as the Commission is conceded the tune changes amazingly, and they declare that the Commission was granted for the very purpose of suiting the plans of these officials. Here is the passage: "Mr. Ritchie ..... has the constitution of the Commission in his hands, and these hands are controlled by the medical officials of the Local Government Board. The Commission has been conceded at this time to serve the ends of these officials, and how skilful and unscrupulous they are and how like wax they mould Mr. Ritchie to their ends was vividly illustrated in their manipulation of the grant for vaccination bonuses." When the Commission was granted Mr. Ritchie, apparently supposing that it might be possible to give reasonable satisfaction to Mr. Tebb's followers, had indicated that it would contain no official of the Local Government Board. For this promise the thanks of the *Vaccination Inquirer* are conveyed to Mr. Ritchie in the statement as to these officials that "their presence might be preferable to that of their instructed and conducted nominees." Mr. Picton had spoken favourably of lawyers as members of the Commission, and three distinguished lawyers, Lord Herschell, Mr. Dugdale, Q.C., and Mr. Meadows White, Q.C., were nominated, but without satisfying those to whose demands the Commission had been conceded. One of the most outrageous of their declarations, and at the same time one of the most remarkable of their admissions, is that, with regard to witnesses, the Commission afforded "such an opportunity as occurs when a poorly equipped army is called to encounter a host with the resources of an empire." It does not lie with us to deny that their witnesses were very poorly equipped with both fact and argument, but the intimation that their army was "called" to the encounter can hardly be characterised in permissible language. It was the anti-vaccination army that had demanded the encounter, that had gone about blustering and boasting about its anxiety to fight. An Irishman trailing his coat at Donnybrook was not to be compared with them in fervour, but no Donnybrook Irishman would have disgraced himself by such cowardly whining over the acceptance of his challenge.

When the *Vaccination Inquirer* looked for nothing from the agitation excepting a fresh illustration of the injustice of Government in refusing its petition it freely admitted that any commission would of necessity contain "a fair proportion of anti-vaccinists." Ever since the Commission was appointed the *Vaccination Inquirer* has declared that it did not contain a single anti-vaccinationist, and Mr. Hopwood, Q.C., did not hesitate to repeat this declaration in Parliament. Not only so, but the London Society formally took up the same position in a public manifesto, in which it protested, as to the Commission, "against the exclusion of anti-vaccinists from its membership." As may be imagined, this assertion that there were no anti-vaccinists on the commission, has been difficult to defend and has given play to much ingenuity. All, or nearly all, the active opponents of vaccination—whether of the operation itself or of its enforcement by law or of both—have been members of, and have had control of, the London Society for the Abolition of Compulsory Vaccination, which is now itself abolished in favour of an Anti-vaccination League, whose objects include the entire disestablishment and disendowment of vaccination and the abolition of all regulations for vaccination in the army, the postal service, &c. Of course, the membership of the two bodies is not necessarily identical. It was always possible to point to the word "compulsory" in the title of the old society and to argue

that membership might mean only objection to compulsion and not to vaccination. We have seen that Dr. Collins looked on vaccination as having been "a *very* doubtful success." It is denied, however, that he is an anti-vaccinationist, so that grave doubt as to the success of vaccination does not make a man an anti-vaccinationist. As to Mr. Picton, we find that in its last issue the *Vaccination Inquirer* declares it to be an easily ascertainable fact that he entered the Commission as a believer in the power of vaccination and that he has now been converted to a disbelief in vaccination. In a previous article we dealt with Mr. Picton's present opinions and arrived at a very different conclusion. It may be asked, however, is the other statement of the *Vaccination Inquirer* true or false—the statement that Mr. Picton was, when he became a member of the Commission, a believer in vaccination? We have already seen that in January, 1889—the year in which the Commission was appointed—Mr. Picton stated in the *Contemporary Review* that he was "rapidly approaching" the conclusion "that vaccination is of no use." Excepting for purposes of verbal quibbling this is a sufficient contradiction to the confident assertion of the anti-vaccination journal. It may be urged in excuse for the mis-statement that the *Vaccination Inquirer* did not know the facts, but it happens that the very words in question are quoted in full in an earlier issue. It happens, also, that in the previous year in the course of its advocacy of the appointment of a Royal Commission the *Vaccination Inquirer* wrote thus: "An able Member of Parliament, who is opposed to compulsory vaccination and *and has no faith in the practice itself*, has promised to move the House if he can obtain promises of adequate support." The italics are ours. The Member who "moved the House" was Mr. Picton, and this statement that he had no faith in vaccination was made by the *Vaccination Inquirer* even before he himself had announced his rapid approach to that mental attitude. Yet the *Vaccination Inquirer*, in its October issue, boldly asserts "that Mr. Picton entered the Commission a believer in this same power" of vaccination.

There is yet another quibble left however. It consists in giving quite a remarkable limitation to the meaning of the term "anti-vaccinist," and it shows to what desperate shifts the apologist is reduced. In the October number of the *Vaccination Inquirer* we read: "Not one real anti-vaccinist was allowed a place on the Commission at any price. To have suffered a penalty under the vaccination laws is the one and only undeniable test of the anti-vaccinist, and not one such man was there." The author of this definition is to be congratulated on his success, for it excludes not only Dr. Collins and Mr. Picton, but also Mr. John Albert Bright, who was appointed in place of the late Mr. Bradlaugh. The *Vaccination Inquirer*, however, gets him out of the net just by the skin of his teeth. Even while he was a member of the Commission Mr. Bright refused to have his own child vaccinated, and when his name came before the Rochdale Guardians in a list of defaulters it was proposed to prosecute him. In the end, however, and after hearing Mr. Bright, no proceedings were taken. Thus he remains outside the *Vaccination Inquirer's* definition. He was willing to suffer a penalty, but nobody would inflict the penalty, and so he is no "anti-vaccinist." He cannot, in fact, become an anti-vaccinationist even if he wants to. We have often held that "real anti-vaccinists" are not so numerous as is supposed, but we never ventured to suggest the cutting down of the list in this fashion. No man who is not also a father, and no woman who is not also a mother, can henceforth be looked on as a "real anti-vaccinist." Moreover, there has not been a single additional "anti-vaccinist" in Leicester for quite a number of years now—since prosecutions and penalties ceased. We had been accustomed to look on Leicester, and Dewsbury, and Oldham, and Nottingham and so forth as hotbeds of anti-vaccination, but obviously our opinion will have to be revised. In these centres anti-vaccination is as dead as Queen Anne, for until a man is fined he is no "anti-vaccinist." To such straits is the organ of the Anti-Vaccination League reduced in its frantic efforts to maintain its own consistency and to prove that no "anti-vaccinist" had a seat on the Commission.

If anything further be needed in illustration of the attitude of the anti-vaccination party towards the Commission it may be found in the report of the proceedings of a gathering of the Anti-vaccination League at Nottingham last month. One of several resolutions adopted was that "this meeting considers that the Royal Commission, when it found that the evidence before it did not establish any scientific theory of vaccination, and when it decided to base its suggestions in favour of vaccination on historical and statistical grounds, should have given full scope to opponents of vaccination to establish their contention that the history and statistics on which the defence of the practice rests are falsified and untrustworthy; and it regrets that the Commission refused to hear, or suppressed, evidence on these heads." Needless to say the Commission arrived at no such finding as is spoken of in the first part of the resolution, while of the 187 witnesses who were heard during the seven years, from 120 to 130 were there to give the anti-vaccination side of the question. What exactly would have been considered full scope it is impossible to say, but some of the complaints made in support of the resolution are really comical. The mover himself had written to the Commission offering to controvert some Birmingham statistics, but, in his own words, "he received a reply stating that the Commissioners did not propose to draw any conclusions from the reports to which he referred or deem it necessary to avail themselves of his offered evidence. Now he took it that was beneath the dignity of a Royal Commission." Clearly, therefore, "full scope" would have included full liberty to anti-vaccinationists to spend the time of the Commission in listening to rebutment of statements which had never been before it or on which it intended to base no part of its conclusions. Again, it appears that one anti-vaccinationist had prepared evidence for his side, but would not present himself in the witness-box unless he were formally summoned, he being a public servant. The evidence in question, or some part of it, was forwarded to the Commission, but as it could not be subjected to the sifting of cross-examination like other evidence both against and in favour of vaccination, it was out of the question for the Commission to publish it, and this is what is referred to as "suppression" of evidence. We are not aware that the Commission formally summoned any one of its 187 witnesses, though many of them were public servants, and that this particular anti-vaccinationist should have deemed himself worthy of such exceptional treatment, or that the league in its corporate capacity should have taken up this particular plaint, is further evidence that anti-vaccinationists are not to be measured by any standard applicable to ordinary humanity. Like the pathological views of one of their witnesses, their grievances are "transcendental," and no British Parliament need ever hope to find for such grievances any reasonable remedy.

THE REPORT FROM THE COUNCIL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND FOR THE OFFICIAL YEAR 1895-96.

No. II.[1]

HAVING dealt in a previous article with the academical and scientific aspects of the report of the Council of the Royal College of Surgeons of England for the official year 1895 we proceed to discuss those sections which relate to the corporate rights and privileges of the Fellows and Members and the finances of the institution. It may be as well to remind our readers that the starting-point of the activity which has been displayed during the year both by Fellows and Members favourable to reform was the request made by the half-yearly meeting of Fellows in January, 1895, that the Council would appoint a conjoint committee of members of the Council and other Fellows of the College to consider the desirability of obtaining a new charter. The Council declined to accede to the request for a conjoint committee, but appointed a committee to receive deputations from the Fellows in reference to the subject in question. The Committee was also empowered to receive deputations from the Members of the College. The result of these instructions was that a deputation from the Association of Fellows was received by the Committee on June 10th, 1895, and submitted eight proposals for their amendment to the charters and by-laws, and that a deputation from the

[1] No. I. appeared in THE LANCET of Oct. 31st, 1896.

Society of Members was received on July 26th, and submitted six propositions with the same object in view. The Committee of Council held six meetings and did not report to the Council until Feb. 5th, 1896. In reply to the deputations the committee recommended, though not unanimously, "That it be recommended to the Council that the deputations from the 'Association of Fellows' and the 'Society of Members' be informed that no point which has been brought forward by them appears to the Council, either on the ground of urgency or desirability, to render it expedient that application should be made at the present time for a new Charter." The Council did not adopt this resolution, for prior to the presentation of the report to the meeting of Council on Feb. 13th an historic event had occurred. At the annual general meeting of Fellows and Members of the College held on Nov. 7th, 1895, when eighteen members of Council, forty-six other Fellows, and seventy-eight Members were present, the following resolution was carried with two dissentients: "That the number of the Council be increased to thirty-two, and that eight of these who may be members shall be elected by the Members only, provided always that no Member who has not been a Member for twenty years shall be eligible for a seat on the Council." This resolution was referred by the Council on Nov. 7th to the half-yearly meeting of Fellows, to be held in January, 1896, for consideration, with the result that a resolution declaring it to be expedient to give to the Members of the College direct representation on the Council was adopted by a very large majority of the eighty-one Fellows present. It was clear that before any steps could be taken by the Council to give effect to this resolution the opinions of absent Fellows would have to be obtained, and a resolution, moved by Mr. Tweedy and seconded by Mr. Rivington, in favour of rejecting the recommendation of the Deputation Committee and taking a poll of the Fellows was carried as an amendment to the report of that committee at the February meeting of the Council; but, owing to a misunderstanding, was itself superseded by a resolution, moved by Sir William MacCormac and seconded by Mr. Bryant: "That before the Fellows are addressed upon the subject the Council do take into consideration at an early meeting the question whether Members should or should not be directly represented on the Council." In pursuance of this resolution the Council considered the question on March 12th and adopted, by 11 votes to 8, the notable resolution that, "as the members of this Council represent the body corporate of this Royal College, and consequently its Members as well as its Fellows, it is the opinion of this Council that no further representation of the Members is desirable." Notice was given at the same meeting of the revival of the resolution at the May meeting of Council for a poll of the Fellows, and at the May meeting accordingly the following resolution was moved by Mr. Tweedy, seconded by Mr. Rivington, and carried by 15 votes to 3:—"That a poll of the Fellows be taken respecting the motion passed at the general meeting of Fellows on January 2nd in favour of giving to the Members of the College direct representation upon the Council, and that a committee be appointed to prepare for the approval of the Council an elucidatory statement of the subject in question, together with the interrogatories which shall be submitted to the Fellows." The committee concluded its labours in July and reported to the Council on July 8th. A circular, with interrogatories, was issued to the Fellows on Oct. 1st; but the result of the poll will not be published till the beginning of 1897. It should be added that in consequence of the decision of the Council to take a poll of the Fellows on the question of the representation of Members on the Council the Council at its meeting in June adopted a report from the deputation committee recommending that the deputations of Fellows and Members should be informed that it appeared to the Council inexpedient at the present time to arrive at any decision in reference to other points involving alterations in the charters and by-laws of the College.

The foregoing is a summary of the gradual evolution of the appeal to the Fellows which is now proceding, and it is obvious that until the issue of the appeal is known—while we are waiting for the verdict—it would be useless for the Annual General Meeting of Fellows and Members to submit to the Council any further resolutions on the subject of direct representation of Members. The question of the admission of women to the examinations for the diploma of Member has been discussed both by the Fellows and Members with an exactly opposite conclusion. To what, then, can the Annual General Meeting address itself? There is still one subject treated in Section IX. of the report and headed "Civil Rights Defence Committee," and that is the case of Mr. R. B. Anderson. Both the Association of Fellows and the Society of Members have taken up this case and are represented on the Civil Rights Defence Committee, and it is time that an effort was made to bring the case to issue and for some pronouncement by the Members of the College. At the instance of the Fellows the Council has instructed its representative on the General Medical Council to forward in every way that seems feasible the objects of the Civil Rights Defence Committee. Ought the College to go any further? Ought funds to be voted for the prosecution of Mr. Anderson's appeals? Ought the influence of the College to be exerted in any other direction? These are questions to which an answer should be given. THE LANCET has shown its practical sympathy with Mr. Anderson in many ways and has devoted very considerable space to articles on the objects and aims of the Civil Rights Defence Committee and to reports from the committee and its offshoot, the Select Committee on Medical Defence. The questions involved are not merely personal to Mr. Anderson, but they involve large professional and even public issues. Mr. Anderson himself has partly suffered from declining—nobly enough—to direct his energies to securing pecuniary compensation for himself. His motto has been, "Perish the individual, but let the cause survive and triumph." Gladly would we see both the individual preserved and compensated and the cause triumphant. For both objects the one great need is the need of funds. Can the College afford to make a grant and would the Council be justified in establishing a precedent which might lead to other claims in the future? Does By-law 15—"The Council will at all times protect and defend every Fellow and Member of the College who may be disturbed in the exercise and enjoyment of the rights, privileges, exemptions, and immunities acquired by him as a Fellow and Member or Member thereof"—bind the Council to devote funds for the purpose of protection and defence? These are important questions which must receive attention and solution. So far as the financial position of the College is concerned the report shows that there was a balance of income over expenditure for the year amounting to £1481. The gross income was £365 in excess of the previous year, whilst the expenditure only exceeded the expenditure of the previous year by £95. The extraordinary expenditure, too, was very heavy, amounting to nearly £600, but against this may be set a reduction of £332 in the expenditure on "alterations, repairs, and painting." That there will be any reduction this year in the two items combined must be regarded as very doubtful, for a considerable sum will have to be paid for re-seating, re-decorating, and re-ventilating the theatre, and the Council is engaged in resisting the imposition of Corporation Duty. If the Council is successful, well and good; but if, as is more probable, the Board of Inland Revenue prevails, the law costs will be heavy and the tax would amount annually to £160 per annum. The Council has resisted the Board of Inland Revenue on the ground that the whole of the property of the College is exempt, under Section XI., Sub-section 3, of the Act, as being property which, or the income or profits whereof, is legally appropriated and applied for the promotion of education and science. To vote money out of the profits to defend Mr. Anderson's rights or the rights of Fellows and Members generally can scarcely be called an appropriation to education and science, and would probably entirely destroy the case of the Council in opposition to the Board of Inland Revenue and ensure a heavy bill for legal costs. As it is, it is not at all certain that the Council will succeed; with a grant to Mr. Anderson's case it seems likely that defeat would be ensured. This is an obstacle to the grant which Mr. Anderson's supporters will have to face and the exact obligations on the Council involved in the by-law will have to be determined by counsel whose opinion the Council of the College does not appear to be very eager to secure. We do not desire to discourage those who are fighting the battle with Mr. Anderson, we only consider it necessary to prepare them for dealing with difficulties which may not have entered into their calculations.

AN evening concert in aid of the Ings House Nurses' Coöperation, 81, New Bond-street, is to take place on Dec. 16th under distinguished patronage and with the assistance of many well-known artists.

AUTO-MOTOR TRAFFIC.

TO DAY (Saturday) will be given the first opportunity which the public have had of judging the merits of the various forms of motors which are to compete with the horse for traction purposes. The Locomotives on Highways Act, 1896, removes many of the impediments which have been placed in the way of British enterprise with regard to self-propelled traction, and to-day, when the new Act comes into force, will witness, it is expected, the introduction upon our public roads of quite a large number of horseless vehicles. Hitherto it has been impossible to adequately judge of their merits, at any rate, in England, for there must of necessity be the widest possible difference between the results of the limited trials which have been made under restricted conditions and the practical test which has been rendered possible by the new Act.

Perhaps the most interesting result of this new legislation from a public point of view will be the placing upon the streets of a number of electrically propelled omnibuses, of which, by the courtesy of Mr. Radcliffe Ward, the engineer of the London Electric Omnibus Company, Limited, we are enabled to give our readers some particulars. There is nothing very remarkable in the construction of the body of the vehicle itself, which has the appearance of a tramcar with steps leading to the top at one end only. The other end presents much the same appearance as the front of an omnibus with the pole removed. The wheels, however, are quite different from any which have hitherto been used, and they are likely to have an important bearing upon the wear and tear of the roads as well as to tend to the absence of noise. We do not know their exact construction, and it must suffice to state that they are pneumatic or air wheels capable of sustaining one and a half tons per wheel. No special monopoly in the use of electricity as a motive power is claimed by the company, but by a perfected and economical use of existing patents Mr. Ward informs us that it is possible to run an electric omnibus at a cost of under 2½*d.* per mile. With this economical view of the matter, however, we are not so much concerned as with the public health and convenience aspect of the question, and if all that is claimed for this new venture should be borne out in actual practice it is probable that the public may reap not a little benefit. With this aspect of the question, however, we must deal later.

In addition to the new line of omnibuses there is to be a "meet" of motor cars under the auspices of the Motor Car Club at the Hôtel Métropole, from which place it is intended to run to Brighton. The start will be made at 10.30 this (Saturday) morning. The cars are to run in procession as far as Brixton, after which each vehicle will be allowed to take its own course to Reigate, where luncheon will be served. At 1.30 a start will be made for Preston Park, where it has been arranged for all the cars to meet in order that Brighton may be entered in procession.

It may not be out of place to warn those intending to take part in the run to Brighton of the danger which may attend the careless use of the more volatile kinds of oil used for motors. In promulgating the regulations relating to the keeping, conveyance, and use of petroleum in connexion with light locomotives, the Home Secretary calls public attention to this matter. "Not only is the vapour which is given off at ordinary temperature capable of being easily ignited, but also, when mixed with air, of forming an explosive mixture. Hence the necessity for strict precautions in dealing with and handling the same, and for the employment of thoroughly sound and properly closed vessels to contain the same, the importance of avoiding the use of naked lights in dangerous proximity to the same or to any place where such petroleum may be kept, and generally of taking precautions to prevent contact of the highly inflammable vapour of this very volatile liquid with any form of artificial light."

Recently a report reached us of the temporary asphyxiation of a cyclist while riding close behind a motor in France, and this is another danger to which we would direct attention. The rapidity of the explosion in petroleum engines does not tend to perfect combustion, and there is a probability of injurious vapours impregnating the atmosphere in the immediate neighbourhood of the engine.

(To be continued.)

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE adjourned meeting of the Fellows of the Royal College of Physicians of London was held on Nov. 6th, the President, Dr. S. WILKS, being in the chair. The question before the College was the resolution moved by Dr. Pavy for the appointment of a committee to consider whether it was desirable to introduce the subject of bacteriology into the curriculum and examinations.

Sir W. ROBERTS, who had moved the adjournment of the debate at the last meeting, spoke in favour of the resolution, urging that it might be possible to introduce bacteriology into the curriculum without adding to the burdens of the student by substituting it for some subject of less importance to him in the practice of his profession.

Dr. HERON also thought that there were some subjects which might give place to bacteriology, the rise of which was one of the most remarkable features of the present epoch. He referred to the great advances made through this study and the light it had thrown on infective disease.

Dr. WASHBOURN, who spoke on the invitation of the President, was in favour of the motion. The arguments advanced on the other side were, he thought, unimportant, for he considered bacteriology could be taught without depriving the student of time devoted to subjects of equal importance. At the same time bacteriology should not be given undue prominence; it was a branch of pathology, and its introduction need make no change in the examination syllabus. It should be mentioned as a branch of pathology in the course of instruction required by the College just as other branches are indicated. He thought that every medical man should be able to make a cultivation in a case of infective throat disease, to examine sputum for tubercle bacilli, and know something of sterilisation. Indeed, the kind of instruction needed should be strictly utilitarian. It could be given quite easily, and he would be loth to accept the *ipse dixit* of an expert on that point. He had been informed by Dr. Murray of Durham University that no difficulty was found there of conducting classes of fifty or sixty students in the subject which would not require any more accommodation than that already provided at the schools for practical pathology.

Dr. W. EWART considered it a primary duty of the College to see that those who were preparing to take its Licence should have the opportunity of being thoroughly equipped, and that the College should see that education should keep abreast with the progress of knowledge.

Dr. NORMAN MOORE strongly deprecated too frequent changes in the curriculum, but he thought that it would be useful to have the report of a committee upon this question. The work to be of any value must be practical laboratory work, and they had to consider whether it would be possible to carry this out with the great body of students. Dr. Kanthack had said that it would not, and his opinion was entitled to great respect. It was very desirable that this subject should be put before the College, for bacteriology meant something more than the ability to recognise tubercle bacilli.

Dr. THORNE THORNE, whilst thinking it most desirable that the commitee should be appointed, doubted the wisdom of giving it undue prominence as an additional subject. It was well that it should be taught in the schools, and it was taught, whilst it is impossible for an examination paper to be set which did not involve some knowledge of the subject.

Sir W. BROADBENT referred to the abrupt changes that had been made in the system of examinations when the fifth year of study was added and to the recent modifications made in them. The appointment of this committee might give an opportunity for a thorough revision of the curriculum, when, too, the provincial teachers might be consulted.

Dr. POORE concurred with Dr. Washbourn's remark that bacteriology could not be divorced from pathology, and knew that in most schools instruction was at present given in the former in the pathological course. He deprecated saddling the student with an entirely new course of lectures.

Dr. ORD observed that no lecturer on medicine could deal with the fevers without reference to bacteriology. To substitute bacteriology for some other subject already in the curriculum would necessitate new regulations entirely and was to be deprecated.

Dr. KINGSTON FOWLER would vote for the resolution to

which he had at first been opposed on the ground that it seemed to foreshadow a new examination with new examiners. But his fears on that score had been dispelled by the debate, and whilst fully recognising the growing importance of bacteriology as a branch of pathology he believed that it could take its place in education without necessarily being made the subject of a separate examination. He agreed with Dr. Poore that it was taught at present as a part of pathology.

Dr. PAVY having briefly replied the resolution was put and was carried unanimously.

The PRESIDENT nominated as members of the committee Dr. Pavy, Dr. Church, Sir Dyce Duckworth, Dr. Ord, Dr. Poore, and Dr. Washbourn.

The College then proceeded to transact the remaining business on the agenda, which comprised the presentation of the College accounts, the quarterly report of the Finance Committee, reports from the Management Committee and from the Laboratories Committee, and the quarterly report of the Examiners for the Licence.

Dr. E. Liveing was re-elected a member of the Committee of Management and Dr. Halliburton a member of the Laboratories Committee.

MEDICAL EDUCATION IN BUFFALO, U.S.A.

MEDICAL education in Buffalo may be taken as a type on a reduced scale of the medical education given in America under the new system. Up to a short time ago it was easy to obtain a degree in medicine at one of the many schools without passing a matriculation examination and after a course lasting only two years; but within the last few years a great change has been effected, and in nearly all the more important schools, including those of Buffalo, everything is conducted according to the most approved modern methods. The oldest medical school of this city is the University of Buffalo, which dates from 1846 (a year made memorable in the annals of American medicine by the discovery of anæsthesia), when a charter was granted by the State of New York for the establishing of a university medical school, and amongst its first professors and most enthusiastic supporters were two very distinguished men, Austin Flint and Frank Hastings Hamilton. When the University was first opened the number of students was 66 and the population of Buffalo 30,000, but at the present time the number of students is about 300 and the population of Buffalo about 400,000. The medical department of the Niagara University was inaugurated in 1883, and from the first insisted on a four years' course, otherwise it is conducted on much the same lines as the Buffalo University, though on a smaller scale, and is a Roman Catholic Institution. There was no public hospital accommodation in Buffalo in 1845, but now, including insane asylums (which are there termed hospitals), there is an aggregate of 3000 beds.

By the laws of New York State, dated 1893, amended by laws of 1896, the degree of Bachelor, or Doctor, of Medicine shall not be conferred before the candidate has filed with the institution conferring it the certificate of the regents (State examining department) that before beginning the first annual medical course counted towards the degree, unless matriculated conditionally, he had either graduated from a registered college or satisfactorily completed a full course in a registered academy or high school or otherwise fulfilled conditions ordained by the regents. The student having satisfied the regents with regard to his acquirements in arts may then proceed with his medical studies. It has been decreed by the State of New York that the course of professional study after registration shall occupy not less than four years in a school or schools of medicine recognised by the State, and that after completion of the four years' study and after a diploma has been taken the candidate shall not be eligible to practise medicine until he has undergone an examination by the State examiners, who if satisfied will grant him a licence. So it will be seen that the State decides as to a man's fitness to begin the study of medicine and also after he has undergone his training as to his fitness to practise. Antecedent to the final examination there will be three professional examinations. Candidates for graduation must be twenty-one years of age; they must produce satisfactory evidence of having studied medicine for four years, of having dissected an entire lateral half of a subject, and of having attended four full courses of lectures; each must also himself compose and write a thesis on some medical subject. The following is the course of instruction for the different years in the four years' course; each year includes a first and second sessions. *First year:* Anatomy, physiology, biology, histology, inorganic chemistry, and hygiene. *Second year:* Anatomy, physiology, medical chemistry, obstetrics, practice of medicine, materia medica and prescription writing, general pathology, comparative pathology, embryology, and minor surgery. *Third year:* Recitations in practice of medicine, therapeutics, obstetrics, surgery and pathology, lectures in practice of medicine, pathology, therapeutics, surgery, obstetrics, and hygiene and toxicology; general clinics in medicine, surgery, and gynæcology in the Buffalo General Hospital and College Building; ward classes at the bedside and laboratory courses in pathology and bacteriology. *Fourth year:* General clinics in medicine, surgery, and gynæcology; special clinics and lectures in ophthalmology, otology, laryngology, insanity, orthopædy, pediatrics, dermatology, nervous diseases, venereal diseases, and genito-urinary diseases; lectures in pathology, gynæcology, practice of medicine, electro-therapeutics, medical jurisprudence, and other advanced topics; ward classes at the bedside; laboratory exercises in clinical microscopy; practical obstetrics in the hospital and outside. The fees are as follows:—*First year.*—Matriculation, $5; perpetual tickets, $250; pharmacal laboratory, $10; chemical laboratory, $10; dissection, $10; examination, $10; total, $295. *Second year.*—Matriculation, $5; histological laboratory, $10; dissection, $10; examination, $10; total, $35. *Third year.*—Matriculation, $5; pathological laboratory, $10; examination, $10; total, $25. *Fourth year.*—Matriculation, $5; examination, $10; total, $15.

ELECTION OF DIRECT REPRESENTATIVES TO THE GENERAL MEDICAL COUNCIL.

FORMAL notice of the impending election has now appeared in our columns and a precept will be issued on Friday next, Nov. 20th. The final day for the receipt of nomination papers is Monday, Nov. 23rd. Voting papers will then be issued to the registered addresses of the electors, and the last day for the return of these papers is Dec. 5th. The poll will be formally declared on Dec. 12th. We desire to draw our readers' attention to the fact that the voting-papers will be sent to their registered addresses. It is a part of our daily routine often to consult the Medical Register, and as a result we know that many registered practitioners are very careless and dilatory in communicating to the registrar their changes of address. If they do not do so now they will lose their franchise. The Naval Medical Service, the Army Medical Staff, and the Indian Medical Department, whose members do not register an address, must apply by post to the Registrars at 299, Oxford-street, for England, and 1, George-square, Edinburgh, for Scotland, when voting papers will be forwarded to them. All registered practitioners, officers in these services, who are at the present time resident in England, Wales, or Scotland, have a right to vote.

DR. BRUCE'S CANDIDATURE.

We have received for publication from Dr. William Bruce, the Direct Representative for Scotland, the following address to—

The Scottish Medical Electors.

GENTLEMEN,—I beg most respectfully to offer to you for a third time my services as your representative in the General Medical Council. As long as the custom prevails that the representatives of the Queen and the licensing bodies continue to hold their seats it would plainly detract from the influence of the direct representatives if the opposite rule held good in their case. In this view I deplore the loss of such valuable members as Mr. Wheelhouse and Sir Walter Foster, both men of great influence in the deliberations of the Council, who have left their mark in the past proceedings of that body. As for myself I continue to hold the opinions to which I gave expression in my former addresses. The experiment of leavening the Council with direct representatives has been

successful. Without detracting from the services of that body as formerly constituted I think we may say without flattering ourselves that new life has been imparted into the proceedings of our medical parliament both as regards education and registration. With regard to the first of these subjects the period of studies has been extended and the teaching is becoming more and more practical. There is still room for improvement in the latter particular, and we in Scotland must follow the lead of the English corporations by throwing the subjects of botany, zoology, physics, and chemistry into a preliminary course, and so leave five whole years free for the medical curriculum proper. As for registration, much greater care is now taken to purge the Register, and the Council has lately become alive to its duty in taking the initiative in such proceedings. Much, however, can still be done in rendering the Register more accessible to the profession and to the public at large by cheapening its production and, if need be, publishing it at shorter intervals. With regard to reform of the Council itself, I believe that any change must involve reconstitution. An ideal Council should consist of, say, sixteen members either popularly elected by the medical graduates and licentiates of each university and corporation, or of one-half the number of direct representatives chosen territorially and one-half appointed by all the licensing bodies together. With regard to other debateable matters they fortunately do not affect us in Scotland to any large extent.

On the medical aid question I sat on the committee which considered it. Much time and trouble were taken to arrive at moderate conclusions, but I am sorry to say our recommendations were not carried when brought before the Council as a body. Personally, I believe the foundations of all medical clubs to be rotten which are based on compounding for *skilled* attention, which in its essence is a commodity of indefinite marketable value. On the other hand, we cannot prevent such bargaining, but we can and ought to stop registered practitioners from selling their services to advertising, touting, and more or less commercial bodies. If medical clubs are to subsist at all they must be considered as of a distinctly charitable character. As to midwives the day is fast approaching (and in my own neighbourhood it is already an accomplished fact) when every lying-in woman will have at her disposal the services of a duly qualified medical practitioner, male or female. But in the Highlands and Islands public help will be needed to secure this result. The State will have to supplement local resources. In large centres, on the other hand, I would look to charity doing the work by the help of lying-in hospitals or special wards in general infirmaries. I am thus opposed to any and all forms of legal registration of midwives.

Finally, as a Poor-law medical officer of more than thirty years' standing, I think Poor-law medical officers ought to have the right of appeal to the Scottish Local Government Board against capricious dismissal and that a Government scheme of superannuation should be set on foot for their benefit. I have only to add that if returned to the Council I shall always be ready in the future, as in the past, to attend to the interests of every individual of my constituency, and that I shall consider it the highest honour of my life to be employed in their service.

I am, your most obedient servant,

Nov. 10th, 1896. WILLIAM BRUCE.

MR. RIVINGTON'S CANDIDATURE.

We are requested to call the attention of our readers to the appeal of Mr. Rivington's committee to the electorate which was published in THE LANCET of Oct. 31st (p. 1254) and which will be found in our advertisement columns this week. The appeal is signed by Mr. Timothy Holmes, Dr. Robert Barnes, Dr. Ward Cousins, and others, and sets out briefly but fully the principles upon which Mr. Rivington has been invited to offer himself as a candidate, begging that the electors will adopt those principles as constituting the only way in which direct representation upon the General Medical Council can be rendered practical.

Mr. Holmes, as chairman of Mr. Rivington's election committee, has addressed letters to the Presidents of the London and Counties Medical Protection Society and the Medical Defence Union, asking each body to take into consideration the principles of which Mr. Rivington's candidature is an expression.

THE CANDIDATURE OF DR. GLOVER, DR. WOODCOCK, AND DR. DRAGE.

A meeting of medical practitioners will be held on Wednesday afternoon next at 5 P.M., at 58, Queen's-gate-terrace, S.W., by kind permission of Dr. Charles Ewart, in support of the joint candidature of Dr. Glover, Dr. Woodcock, and Dr. Drage.

DR. ALDERSON'S CANDIDATURE.

A meeting in support of Dr. Alderson's candidature as a direct representative on the General Medical Council will be held, by permission of Mr. Dodsworth, at Ingledew, Arlington-park, close to Gunnersbury Station, on Tuesday, Nov. 17th, at 4 P.M.

THE HEALTH OF BELFAST.

IN his report presented to the city corporation on Nov. 2nd the medical officer of health (Dr. Whitaker) states that Belfast is not, and never can be, a very healthy city, and that this arises in great part from causes such as its low-lying situation at the mouth of the Lagan, its damp soil with high subsoil water, its moist air, the small amount of sunshine in comparison with other districts, and the low temperature which it experiences in comparison with other large towns in Ireland—causes which are not preventable. Further, the fact that in the city there is so large a working-class population engaged in deleterious occupations tends to keep the death-rate high. Dr. Whitaker points out, however, that the slums in Belfast are comparatively few, and tenement houses are almost unknown. The only year in which an accurate estimate can be had of the death-rate is 1891—the census year—and in that year the death-rate of Belfast was lower than those of Preston, Liverpool, Manchester, and many other towns, and about the same as that of Glasgow. The infantile mortality is about 160 per 1000 births in Belfast, while in England, in the thirty-three great towns, it was last year 182 per 1000 births, the average for the past ten years being 164. Dr. Whitaker draws attention to the want of hospital accommodation in Belfast, and he points out that the high birth-rate must necessarily involve a high death-rate. He calls attention again to the houses without back passages and to the condition of the sewers in the lower parts of the city, which, he thinks, are in a bad condition, and he advocates the adoption of the Notification of Infectious Diseases Act and the building of a proper isolation hospital. He thinks the death-rate (whether 25 or 26 per 1000 does not matter) is higher than it should be and should be reduced; and in conclusion he wisely insists that all improvements, whether sanitary or otherwise, are influenced largely by economic considerations, but that it is a false economy which does not provide for the health of the people.

NEW STUDENTS' ROOM AT THE ROYAL INFIRMARY, LIVERPOOL.—Our Liverpool correspondent writes:—This session inaugurates a new students' room at the Royal Infirmary. It had been long felt by the senior students attending the hospital that a more comfortable and conveniently situated room than that which they formerly occupied was greatly needed. Representations were made to the committee on the matter with the result that a room in every way suitable and well situated in the entrance hall was placed at their disposal. By means of a sheet of glass inserted into the door the students in the room are enabled to see the board on which are affixed the names of the honorary staff present in the wards. The room is lofty and commodious and is tastefully furnished with many comfortable armchairs and solidly built tables. There are, also, two fireplaces. Lockers to accommodate books and instruments are also provided at a nominal rental. Smoking is allowed in the room, which remains open from 9 A.M. till 5 P.M. The old students' room will in future be used as a cloak-room. The attitude of the committee towards the students attending the hospital has always been kindly and solicitous, and any reasonable request by the students has always been cheerfully granted.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

Sewerage and Drainage in the Valleys of Monmouth and Glamorgan, by the late T. W. THOMPSON, D.P.H.[1]—This report was the last one compiled by the late Mr. T. W. Thompson, medical inspector of the Local Government Board, before his untimely and unexpected death. It was undertaken because of the rapid growth of towns and villages in some of the valleys of Monmouthshire and Glamorganshire, where coal-mining, ironworks, and tin-plate works have at one and another time attracted large populations. The resulting communities have had hardly any alternative but to put their sewage direct into the mountain streams which unite to form either the river Usk and its main affluent the river Ebbw, or the Rumney river, and it became clear that it was of very little use to call upon the authorities on one part of any of the five streams involved to remedy this unless similar action was taken as regards the other authorities on the same stream; and in a similar way it was all but useless to ask the combined authorities on any one of the several minor affluents to proceed towards the purification of their sewage, unless the same process was carried out on all of the affluents, and also as regards such districts as were situated on the main rivers themselves, the Ebbw, the Usk, and the Rumney. Mr. Thompson's mission seems to have been to report on the actual circumstances of the many towns, villages and streams involved, and also to present to the Local Government Board the considerations which should be held in view in deciding how far the work of sewage disposal could best be effected by one and another authority separately, or by groups of authorities on separate affluents or on a combination of affluents, or by one or more main schemes involving the trunks of the rivers Usk and Rumney with all their affluents. The report is of necessity both long and largely descriptive; indeed it covers no less than fifty-one folio pages of printed matter. But it is impossible not to see throughout the painstaking character of the writer or not to detect the care which he always bestowed on every detail of his work. His summary of considerations is admirably set out; and at the same time he formulates the evidence on which his conclusions are based in such a way as to show how great was his competency to undertake and to advise on a question of wide importance and involving a large number of intricate considerations. Into the details of such a report we do not propose to enter. Such details have concern mainly with those interested in the twenty-three sanitary districts involved and in the well-nigh one hundred miles of brooks, streams, and rivers on the banks of which they lie. To ensure success, all the district councils must secure purification, which shall be real, for their sewage. In many places the valleys are steep, deep, and narrow, and land for such purification is not available, and some of the localities are too sparsely populated to justify separate works. On the other hand, one or two main trunks of sewers would be free from these and other objections, and it is probable that such main outfalls could discharge directly into the Severn estuary without risk of nuisance to the towns on its banks. The greater scheme would, of course, involve a large sum of money, but when this is contrasted with the separate sums which each district would have to raise for the preparation and maintenance of separate works of sewage purification it is highly probable that the final cost of the combined scheme or schemes would be less than that of piecemeal and detailed action. This is evidently Mr. Thompson's view. The report was not signed at the date of Mr. Thompson's death, but it remains as a testimony to the very high qualities which he possessed, and it emphasises anew the loss which his death has occasioned to the public service.

[1] Eyre and Spottiswoode, East Harding-street, E.C.; John Menzies and Co., Edinburgh and Glasgow; Hodges, Figgis, and Co., Dublin. 1896. Price 9d.

THE REPORT OF THE MEDICAL OFFICER OF HEALTH OF THE PORT OF LONDON.

The recently issued half-yearly report of Dr. Collingridge, medical officer of health of the Port of London, gives an account of the work done in his department during the first six months of the current year, a period which, although uneventful from a public health point of view, has nevertheless provided ample employment for the sanitary staff. No fewer than 13,634 vessels of all classes were visited by the officers of the department, 11,502 of these, or 84·36 per cent. of the whole number, being British, whilst the Swedish and Norwegian vessels came next in order with a joint total of 989, or 7·25 per cent. of the whole. The vessels arriving at Gravesend from foreign ports during the half-year amounted to 4922, all of which were visited by the port medical officers, and 371 of them, carrying 2382 passengers and crews to the number of 4973, were medically inspected—i.e., the whole of the passengers and crew were mustered and individually examined by the medical officer. Wherever the vessel came from any sick person on board was examined; if the case was infectious the person was removed to the Port Hospital and the vessel was disinfected. There was a medical inspection of every vessel arriving from an "infected" port; in the case of other ships the matter is absolutely at the discretion of the visiting medical officer, who carries it out if there be any reason to suspect sickness or if the answer given to his inquiries are in any degree unsatisfactory or incomplete. Two cases of failure to report sickness were discovered; in one of them the shipmaster stated that he was under the impression that it was only necessary to report cases of sickness occurring on the homeward voyage, but on being informed that he must include those which arose in foreign ports he undertook to be more careful in future, and legal proceedings were therefore not resorted to. During the six months now under consideration a larger number of cases of infectious disease have been dealt with than in any previous half-year—small-pox having occurred on board eight vessels, scarlet fever on board seven, enteric fever on board twenty-five, measles on board seven, together with various cases of chicken-pox, erysipelas, diphtheria, &c.; two cases of scurvy were found on board a sailing vessel which arrived from Australia. The quantity of London sewage dealt with at Barking during 1894 (the figures for 1895 are not yet available) was 45,780·4 million gallons, and at Crossness 28,277·9 million gallons—a total of 74,058·3 million gallons. At Barking precipitation was effected by the use of 4·77 grains of lime and 0·92 grain of protosulphate of iron per gallon of raw sewage, the amounts at Crossness being 3·52 grains of lime and 1 grain of the iron salt per gallon. The river water is now of a better colour and much of the formerly deposited mud has disappeared, clean, bright shingle being visible in many places. Dr. Collingridge's reports, dealing as they do with a special department of sanitary administration, contain much useful information on the subject of practical hygiene.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Plumstead Sanitary District.—Dr. Sidney Davies, in referring to the cases of small-pox which occurred in his district in 1895, relates that a friend of one of the patients isolated at the hospital ships refused to be vaccinated and in visiting the ships contracted the disease. There can be but little sympathy with persons who thus disregard the advice both of the medical officer of health and of the hospital authorities. The neglect to procure prompt medical advice in certain cases of scarlet fever led, Dr. Davies reports, to an unnecessary extension of the disease, and he expresses a belief that if householders were compelled to take steps for ascertaining the nature of the illness and to notify infectious disease scarlet fever might be as rare as small-pox. We are afraid this is a somewhat utopian view, inasmuch as there are many points of difference in the natural history of small-pox and scarlet fever, to say nothing on the question of vaccination. Dr. Davies has paid attention during 1895 to the question of the spread of diphtheria by school influence. There were 148 cases of the disease notified, and of these 77 attended school and 71 did not. In 45 cases no school was attended by other children in the family. In 85 cases school was not attended within a week of the attack. From these facts Dr. Davies concludes that in more than half the cases in Plumstead during last year school attendance was not the direct cause

of infection, and that in nearly one-third of the cases school attendance could not have been either the direct or indirect cause. Dr. Davies gives a complete account of an outbreak of enteric fever in Plumstead which was caused by infected milk; it seems that the milk may have become infected either by polluted water, by sewer air, or by a diseased condition of the cows, and Dr. Davies thinks the first is the most probable cause.

Nottingham Urban District.—Dr. Philip Boobbyer reports that for the first time for many years Nottingham has been practically free from measles for over twelve months, the average annual death-rate during the past decade having been 102. At the time, however, of writing his report Dr. Boobbyer states that an epidemic was in active progress which held out fair prospects of making up for the deficiency of 1895. The deaths from enteric fever in Nottingham during 1895 correspond to a death-rate of 0·24 per 1000, as compared with a ten years' annual average of 0·30; the rate for London during 1895 was 0·14, that for the thirty-three great towns 0·20. Of the great towns 8 had higher and 23 lower rates than Nottingham during 1895, the towns with the higher rates being Sunderland, 0·96; Bolton, 0·45; Salford, 0·42; Birkenhead, 0·39; Liverpool, 0·39; Burnley, 0·30; Sheffield, 0·25; and West Ham, 0·26. In comparing the reduced death-rate for enteric fever in Nottingham within recent years with that in other large towns Dr. Boobbyer reports that the Nottingham reduction has neither been so pronounced nor so continued as elsewhere, and he is inclined to regard the dry system of excrement disposal which has been maintained in Nottingham as the probable explanation of the relatively backward position of that town. Nottingham has still, he reports, more than 40,000 pail closets together with some hundreds of midden privies. It has, however, to be recorded that the town council in July of last year passed a resolution practically prohibiting the further erection of pail closets. Dr. Boobbyer has, as in former years, embodied tables showing the numbers of primary and secondary hospital and home cases together with the fatality rate of each group, and he also presents a table, which we reproduce here, summarising the records for the three years 1891-3.

NOTTINGHAM, 1892, 1893, 1894.—*Table showing the results of Hospital and Home Isolation respectively during the years 1892, 1893, and 1894, both with regard to the development of secondary cases, and to mortality in each class of cases.*

	Class of Cases.	Number of cases.	Per cent. of cases.	Number of deaths.	Deaths per cent. of cases.	
Hospital cases.	(*a*) Primary	2486	64·7 % of all notified cases.	70	2·8	Total death-rate per cent. 3·2.
	(*b*) Secondary in houses from which (*a*) came, within 21 days of their removal	395	15·8 % additional to (*a*).	17	4·3	
	(*c*) Secondary after return home of cases from hospital, and within 21 days of their return	134	4·6 % additional to (*a*) and (*b*).	9	6·7	
	(*d*) Cases infective on discharge	86	3·0 % of (*a*) and (*b*).	—	—	
Home cases.	(*e*) Primary	580	15·1 % of all notified cases.	52	8·9	Total death-rate per cent. 9·1.
	(*f*) Secondary during progress of case at home	236	40·6 % additional to (*d*).	22	9·3	

Southport Sanitary District.—For this decade 1886-1895 the death-rate of Southport from diphtheria amounted to 2294 per 10,000,000 as against a rate of 2020 for England and Wales as a whole. Dr. Henry Vernon, in discussing why the excess should obtain, expressed the opinion that epidemics of this disease have coincided with rapid changes in the subsoil water. The subsoil of Southport is a highly porous one, and an increase in the rainfall is soon followed by a rise of the subsoil water and a consequent displacement of soil air. This is the only peculiarity which Dr. Vernon is able to adduce as explaining the high diphtheria rate of Southport. In discussing the causes of specific diseases Dr. Vernon makes the following remarks, which will be appreciated by the more modern epidemiologists. "Theoretical considerations seem to point to specific germs generated by previous cases as the *causa causans* of each case of specific disease. Administrative experience and familiarity with the concomitant conditions obtaining in such cases, however, seem to point rather to filth nuisances as the effectual cause of these diseases. As for tracing any connexion between any given case and some previous case it accords with my experience that in the vast majority of cases the search is futile. Now and again a series of cases occurs in which the common factor is discoverable. ..... But the great majority of cases are not so related. The common factor is mostly filth—or emanations from filth—and filth only. I do not say that specific germs are generated *de novo* in filth; but I am persuaded that in the majority of cases not only is there no connexion with the previous case discovered, but there is no previous case discoverable."

Holborn Sanitary District.—Dr. W. A. Bond is evidently in favour of measles being added to the list of notifiable diseases, and in a special report on the subject he points out to his sanitary authority that 1894 exacted a death toll of 3292 persons, while scarlet fever claimed but 964; he added, too, that while the deaths from scarlet fever have been undergoing a diminution those from measles have increased. Notification would, Dr. Bond points out, enable children from infected houses to be excluded from school, and thus school outbursts to be controlled without disturbing work by actual closure of the schools. Dr. Bond also furnishes in his report an interesting analysis of the 676 cases of small-pox which were admitted into the hospital ships during the six months ended Dec. 29th, 1895. Of 113 children under ten years of age no less than 104 were unvaccinated; 7 were vaccinated, and in 2 there was no history of vaccination. Of 68 persons aged ten and under fifteen years 36 were unvaccinated, 31 vaccinated, and in 1 there was no history of vaccination. After stating these figures Dr. Bond points out that the number of vaccinated children in the metropolis is much greater than the unvaccinated, and he estimates that during 1895 there were among children under ten years of age at least five times as many vaccinated as unvaccinated. Admitting, therefore, that the two cases in which there was no history had been vaccinated, and that the non-vaccinated had only suffered in the same proportion as the vaccinated, there would have been only 2 cases among the unvaccinated under ten years of age instead of the 104 which actually occurred. Again, if the vaccinated had suffered equally with the unvaccinated there would have been at least 520 cases of small-pox instead of the 9 which occurred—i.e., if vaccination had had no protective influence there would have been, Dr. Bond states, sixty times as many cases of small-pox among the vaccinated as actually occurred. Similarly in the age group ten to fifteen, Dr. Bond estimates that if the vaccinated had suffered in the same proportion as the unvaccinated there would have been at least 468 cases of small-pox among adolescents of those ages who were vaccinated, instead of the 32 which actually occurred. Not one of the 68 cases from ten to fifteen was stated to have been re-vaccinated.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6813 births and 4290 deaths were registered during the week ending Nov. 7th. The annual rate of mortality in these towns, which had increased in the three preceding weeks from 16·3 to 19·7 per 1000, further rose last week to 20·6. In London the rate was 20·2 per 1000, while it averaged 20·9 in the thirty-two provincial towns. The lowest rates in these towns were 12·8 in Cardiff, 15·0 in Leicester, 15·8 in Bristol, and 15·9 in Swansea; the highest rates were 24·7 in Wolverhampton, 24·9 in Burnley, 25·2 in Liverpool, and 26·6 in Plymouth. The 4290 deaths included 367 which were referred to the principal zymotic diseases, against 349 and 357 in the two preceding weeks; of these, 79 resulted from diphtheria, 72 from measles, 60 from scarlet fever, 60 from "fever" (principally enteric), 53 from whooping-cough, and 42 from diarrhœa. The lowest death-rates from these diseases were recorded in Bristol, Portsmouth, Bradford, and Sheffield, and the highest rates in Salford, Burnley, Gateshead, Hull, and Plymouth. The greatest mortality from

measles occurred in Nottingham, Hull, Gateshead, and Plymouth; from scarlet fever in Oldham; from whooping-cough in Wolverhampton, Burnley, Huddersfield, and Swansea; from "fever" in Halifax and Nottingham; and from diarrhœa in Sunderland and Plymouth. The 79 deaths from diphtheria included 53 in London, 6 in West Ham, and 3 in Cardiff. No death from small-pox was registered in any of the thirty-three towns. There were 2 cases of small-pox under treatment in the Metropolitan Asylum Hospitals on Saturday last, the 7th inst., against 2, 1, and 2 at the end of the three preceding weeks; no new cases were admitted during the week. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 4137, against 4073, 4164, and 4160 on the three preceding Saturdays; 384 new cases were admitted during the week, against 372, 448, and 367 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 334 and 387 in the two preceding weeks, further rose last week to 440, and were 45 above the corrected average. The causes of 76, or 1·8 per cent., of the deaths in the thirty-three large towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Cardiff, Bradford, Newcastle-upon-Tyne, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, and Blackburn.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·9 and 18·6 per 1000 in the two preceding weeks rose again to 20·3 during the week ending Nov. 7th, but was 0·3 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 15·0 in Edinburgh and 16·1 in Leith to 22·1 in Glasgow and 22·2 in Aberdeen. The 592 deaths in these towns included 23 which were referred to measles, 11 to diarrhœa, 8 to whooping-cough, 7 to scarlet fever, 7 to "fever," and 3 to diphtheria; in all, 59 deaths resulted from these principal zymotic diseases, against 68 and 69 in the two preceding weeks. These 59 deaths were equal to an annual rate of 2·0 per 1000, which was slightly above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had increased in the three preceding weeks from 5 to 20, further rose to 23 last week, of which 19 occurred in Glasgow and 2 in Paisley. The 8 deaths from whooping-cough were within one of the number in the preceding week, and included 7 in Glasgow. The fatal cases of scarlet fever, which had declined from 10 to 3 in the three preceding weeks, rose again to 7 last week, of which 3 occurred in Aberdeen and 2 in Glasgow. The 7 deaths referred to different forms of "fever" showed an increase of 4 upon the number registered in the preceding week, and included 5 in Glasgow, where 2 of the 3 fatal cases of diphtheria were also recorded. The deaths from diseases of the respiratory organs in these towns, which had been 122 and 130 in the two preceding weeks, further rose to 168 last week, but were slightly below the number in the corresponding week of last year. The causes of 37, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 28·3 and 23·7 per 1000 in the two preceding weeks, rose again to 27·7 during the week ending Saturday, Nov. 7th. During the past six weeks of the current quarter the death-rate in the city has averaged 23·9 per 1000, the rate during the same period being 17·4 in London and 15·7 in Edinburgh. The 172 deaths registered in Dublin last week showed an increase of 13 upon the number in the preceding week, and included 17 which were referred to the principal zymotic diseases, against 26 and 10 in the two preceding weeks; of these, 7 resulted from "fever," 5 from scarlet fever, 3 from whooping-cough, and 2 from diarrhœa, but not one either from small-pox, measles, or diphtheria. These 17 deaths were equal to an annual rate of 2·5 per 1000, the zymotic death-rate during the same period being 1·5 in London and 0·2 in Edinburgh. The deaths referred to different forms of "fever" (principally enteric), which had been 8, 9, and 4 in the three preceding weeks, rose again to 7 last week. The fatal cases of scarlet fever, which had been 9 and 3 in the two preceding weeks, rose again to 5 last week. The mortality from whooping-cough and from diarrhœa slightly exceeded that recorded in the preceding week. The 172 deaths in Dublin last week included 24 of infants under one year of age, and 47 of persons aged upwards of sixty years; the deaths of infants showed a further decline from recent weekly numbers, while those of elderly persons showed a slight further increase. Four inquest cases and 4 deaths from violence were registered; and 55, or nearly a third, of the deaths occurred in public institutions. The causes of 10, or nearly 6 per cent., of the deaths in the city last week were not certified.

VITAL STATISTICS OF LONDON DURING OCTOBER, 1896.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality during October in each of the forty-three sanitary areas of London. With regard to the notified cases of infectious disease in the metropolis during last month, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to 14·6 per 1000 of the population, estimated at 4,421,955 persons in the middle of this year. In the three preceding months the rates had been 12·4, 13·1, and 14·5 per 1000 respectively. Among the various sanitary areas the rates were considerably below the average in Westminster, Marylebone, Strand, Woolwich, Lee, and Plumstead; while they showed the largest excess in Stoke Newington, Bethnal Green, St. George-in-the-East, St. George Southwark, Greenwich, and Lewisham. The prevalence of small-pox in London showed a further decline, only 2 cases being notified during the month under notice, both of which belonged to Fulham sanitary area. The Metropolitan Asylum Hospitals contained only 2 small-pox patients at the end of October, against 23, 12, and 4 at the end of the three preceding months, and only one new case was admitted during last month. The prevalence of scarlet fever in London showed a slight further increase upon that recorded in recent months; this disease was proportionally most prevalent in Stoke Newington, Hackney, St. Luke, Bethnal Green, St. George-in-the-East, Mile End Old Town, Battersea, and Greenwich sanitary areas. The Metropolitan Asylum Hospitals contained 4054 scarlet fever patients at the end of October, against 3170, 3348, and 3847 at the end of the three preceding months; the weekly admissions averaged 398, against 399, 362, and 412 in the three preceding months. The prevalence of diphtheria in London differed but slightly from that recorded in the preceding month; among the various sanitary areas this disease showed the highest proportional prevalence in Shoreditch, Whitechapel, St. George in the East, Poplar, St. Olave Southwark, Camberwell, Greenwich, and Lewisham. There were 780 diphtheria patients under treatment in the Metropolitan Asylum Hospitals at the end of October, against 713, 688, and 774 at the end of the three preceding months; the weekly admissions averaged 105, against 114, 89, and 116 in the three preceding months. The prevalence of enteric fever in London showed a slight decline from that recorded in the preceding month; this disease was proportionally most prevalent in Westminster, Marylebone, Hackney, Clerkenwell, and Bethnal Green. Erysipelas showed the highest proportional prevalence in Holborn, Shoreditch, Bethnal Green, Mile End Old Town, and St. George Southwark sanitary areas. The 24 cases of puerperal fever notified during October included 4 in Islington sanitary area.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas, the deaths occurring in the institutions of London having been distributed among the different sanitary areas in which the patients had previously resided. During the five weeks ending Saturday, Oct. 31st, the deaths of 6979 persons belonging to London were registered, equal to an annual rate of 16·5 per 1000, against 21·8, 18·0, and 14·5 per 1000 in the three preceding months. The lowest death-rates during October in the various sanitary areas were 11·0 in Lee, 11·3 in Wandsworth, 11·4 in Hampstead, 12·4 in Fulham, 13·2 in Paddington, and 13·3 in Stoke Newington; the highest rates were 20·2

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON—OCTOBER, 1896.

(Specially compiled for THE LANCET.)

SANITARY AREAS.	Estimated population in the middle of 1896.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of Infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.†	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,421,955	2	3479	1506	—	429	15	24	745	—	6200	14·6	—	52	93	307	75	—	82	2	104	715	1·7	6979	16·5	131
West Districts.																										
Paddington	124,838	—	83	21	—	6	—	—	12	—	122	10·2	—	—	1	6	2	—	—	—	9	18	0·8	158	13·2	122
Kensington	170,660	—	120	25	—	14	1	2	29	—	201	12·3	—	—	3	4	1	—	3	—	4	15	0·9	241	14·7	144
Hammersmith	104,561	—	49	21	—	7	—	1	18	—	96	9·6	—	2	4	3	—	—	2	—	2	10	1·0	139	13·9	125
Fulham	115,008	2	99	27	—	11	—	1	15	—	155	14·1	—	—	2	5	—	—	3	—	3	13	1·2	137	12·4	84
Chelsea	96,657	—	88	46	—	7	—	1	17	—	159	17·2	—	—	4	16	4	—	1	—	1	26	2·8	171	18·4	120
St. George Hanover-square	80,041	—	57	14	—	6	—	—	6	—	83	10·8	—	—	3	4	—	—	—	—	1	8	1·0	113	14·7	179
Westminster	53,477	—	19	11	—	8	1	—	8	—	47	9·2	—	1	—	5	2	—	2	—	3	13	2·5	80	15·6	108
St. James Westminster	22,955	—	10	—	—	1	—	—	1	—	12	5·5	—	—	—	—	1	—	1	—	—	2	0·9	34	15·5	67
North Districts.																										
Marylebone	141,114	—	99	33	—	19	—	—	30	—	181	13·4	—	—	3	6	1	—	3	—	4	17	1·3	225	16·6	93
Hampstead	75,812	—	44	8	—	4	—	—	5	—	59	8·1	—	2	1	—	—	—	—	—	1	3	0·4	83	11·4	109
St. Pancras	241,066	—	142	54	—	28	—	1	41	—	266	11·5	—	1	1	12	5	—	8	—	4	31	1·3	393	17·0	141
Islington	337,629	—	296	110	—	39	—	4	42	—	491	15·2	—	3	8	26	8	—	7	—	6	58	1·8	529	16·5	125
Stoke Newington	33,615	—	41	6	—	6	—	—	5	—	58	18·0	—	—	1	1	—	—	2	—	—	4	1·2	43	13·3	125
Hackney	213,774	—	247	78	—	28	1	1	24	—	389	19·0	—	—	5	14	3	—	5	1	8	36	1·8	289	14·1	112
Central Districts.																										
St. Giles	38,168	—	31	3	—	3	—	—	6	—	43	11·8	—	—	—	—	—	—	—	—	2	2	0·5	57	15·6	71
St. Martin-in-the-Fields	13,003	—	6	2	—	2	1	—	1	—	12	9·6	—	—	—	1	1	—	—	—	—	3	2·4	17	13·6	95
Strand	23,820	—	14	2	—	2	—	—	3	—	21	9·2	—	—	—	—	—	—	—	—	—	—	—	39	17·1	120
Holborn	30,932	—	11	12	—	4	—	—	11	—	38	12·8	—	—	—	2	—	—	—	—	1	4	1·3	60	20·2	176
Clerkenwell	66,195	—	61	28	—	10	—	—	8	—	107	16·9	—	—	4	8	2	—	3	—	4	21	3·3	114	18·0	129
St. Luke	41,478	—	39	11	—	4	1	—	10	—	65	16·3	—	1	1	1	2	—	1	—	2	8	2·0	106	26·6	122
City of London	31,409	—	29	3	—	—	—	—	8	—	40	13·3	—	—	—	—	1	—	1	—	—	2	0·7	47	15·6	146
East Districts.																										
Shoreditch	122 265	—	89	49	—	16	2	—	44	—	200	17·1	—	4	6	12	2	—	2	—	6	32	2·7	249	21·2	201
Bethnal Green	129,151	—	200	47	—	21	—	—	47	—	315	25·4	—	8	6	7	1	—	5	—	2	29	2·3	210	17·4	142
Whitechapel	78,886	—	73	34	—	9	—	—	17	—	133	17·6	—	1	4	4	2	—	2	—	2	15	2·0	183	20·2	125
St. George-in-the-East	47,589	—	45	23	—	6	—	1	10	—	85	18·6	—	—	3	3	—	—	1	—	4	11	2·4	114	25·0	148
Limehouse	58,347	—	46	22	—	3	—	—	12	—	83	14·8	—	7	—	3	6	—	—	—	2	18	3·2	122	21·8	162
Mile End Old Town	111,226	—	111	38	—	11	—	—	26	—	186	17·4	—	3	7	6	2	—	—	—	1	19	1·8	199	18·7	149
Poplar	169,379	—	115	76	—	20	—	2	32	—	245	15·1	—	3	1	14	1	—	2	—	4	25	1·5	302	18·6	157
South Districts.																										
St. Saviour Southwark	25,276	—	17	5	—	2	—	—	5	—	29	12·0	—	1	1	1	1	—	—	—	1	5	2·1	43	17·7	179
St. George Southwark	60,301	—	57	28	—	4	—	—	18	—	107	18·5	—	1	1	4	2	—	1	—	—	9	1·6	116	21·8	140
Newington	121,191	—	85	36	—	11	—	1	17	—	150	12·9	—	2	3	9	2	—	5	—	1	22	1·9	246	21·2	178
St. Olave Southwark	11,673	—	5	8	—	3	—	—	2	—	18	16·1	—	—	—	1	—	—	1	—	3	5	4·5	21	18·8	121
Bermondsey	85,508	—	34	34	—	8	—	2	13	—	91	11·1	—	—	1	7	1	—	1	—	4	14	1·7	154	18·8	178
Rotherhithe	40,432	—	24	13	—	4	—	—	6	—	47	12·1	—	1	—	5	1	—	1	—	4	12	3·1	97	25·0	231
Lambeth	296,036	—	225	89	—	21	3	2	43	—	383	13·5	—	3	9	18	2	—	2	—	5	39	1·4	454	16·0	115
Battersea	165,864	—	163	26	—	9	—	2	25	—	225	14·8	—	2	2	7	3	—	2	—	4	20	1·3	222	14·0	115
Wandsworth	188,908	—	175	60	—	14	3	1	29	—	282	15·6	—	1	2	5	—	—	2	—	2	12	0·7	205	11·3	90
Camberwell	253,975	—	166	124	—	18	—	—	29	—	407	16·7	—	1	4	42	4	—	2	—	1	54	2·2	326	15·9	114
Greenwich	176,203	—	174	78	—	18	1	—	29	—	300	17·8	—	1	2	13	8	—	9	1	6	40	2·4	294	17·4	126
Lewisham (excluding Penge)	83,795	—	39	98	—	7	—	1	7	—	152	18·9	—	—	—	26	—	—	—	—	4	30	3·7	120	14·9	109
Woolwich...	41,334	—	8	9	—	6	1	—	8	—	32	8·1	—	—	—	2	1	—	—	—	2	5	1·3	62	15·6	142
Lee	38,714	—	9	11	—	4	—	1	5	—	30	8·1	—	2	—	3	—	—	—	—	—	5	1·3	41	11·0	108
Plumstead	59,610	—	24	13	—	1	—	—	3	—	41	7·2	—	1	3	1	3	—	—	—	1	9	1·6	78	13·6	134
Port of London	—	—	—	—	—	4	—	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including 50 cases of membranous croup.

† Including deaths from membranous croup.

in Holborn and in Whitechapel, 21·2 in Shoreditch and in Newington, 21·8 in Limehouse and in St. George Southwark, 25·0 in St. George-in-the-East and in Rotherhithe, and 26·6 in St. Luke. During the five weeks of October 715 deaths were referred to the principal zymotic diseases in London; of these, 307 resulted from diphtheria, 104 from diarrhœa, 93 from scarlet fever, 82 from enteric fever, 75 from whooping-cough, 52 from measles, and 2 from ill-defined forms of continued fever. These 715 deaths were equal to an annual rate of 1·7 per 1000; among the various sanitary areas the lowest death-rates from these diseases were recorded in Paddington, Kensington, St. James Westminster, Hampstead, St. Giles, City of London, and Wandsworth; and the highest rates in Chelsea, Clerkenwell, Shoreditch, Limehouse, St. Olave Southwark, Rotherhithe, and Lewisham. No fatal case of small-pox was registered in London during October; it is now nearly four months since a death from this disease was recorded within the metropolis. The 52 deaths referred to measles were less than a third of the corrected average number in the corresponding periods of the ten preceding years; this disease was proportionately most fatal in Bethnal Green and Limehouse sanitary areas. The 93 fatal cases of scarlet fever were 49 below the corrected average number; this disease showed the highest proportional fatality in Clerkenwell, Shoreditch, Whitechapel, Mile End Old Town, and Plumstead sanitary areas. The 307 deaths from diphtheria exceeded by 84 the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Chelsea, Clerkenwell, Shoreditch, Rotherhithe, Camberwell, and Lewisham. The 75 fatal cases of whooping-cough were 33 below the corrected average; this disease showed the highest proportional fatality in St. Luke, Limehouse, and Greenwich sanitary areas. The 82 deaths referred to enteric fever were 11 below the corrected average number; among the various sanitary areas this disease was proportionally most fatal in Westminster, Stoke Newington, Clerkenwell, Newington, and Greenwich. The 104 fatal cases of diarrhœa were rather less than half the corrected average number. In conclusion, it may be stated that the mortality in London during October from these principal zymotic diseases was nearly 25 per cent. below the average.

Infant mortality in London, measured by the proportion of deaths of children under one year of age to births registered, was equal to 131 per 1000, and was slightly below the average. Among the various sanitary areas the lowest rates of infant mortality were recorded in Fulham, St. James Westminster, St. Giles, St. Martin-in-the-Fields, and Wandsworth; and the highest rates in St. George Hanover-square, Holborn, Shoreditch, St. Saviour Southwark, Newington, and Rotherhithe.

VITAL STATISTICS OF QUEENSLAND.

The recently published annual report of the Registrar-General of Queensland shows that during the year 1895 the health of the colony was very satisfactory. The population on the last day of the year was estimated at 460,550 persons, of whom 4 per cent. were coloured aliens, classified as follows:—Chinese, 7880 (7773 males and 107 females), or 1·71 per cent.; Polynesians, 8745 (8094 males and 651 females), or 1·90 per cent; other Asiatics, 2033 (1929 males and 104 females), or 0·44 per cent. The marriages were 2821, or 6·2 per 1000 mean population, a rate which though much below the average of some years in the last decennium was higher than in either 1893 or 1894. Six of the husbands were under nineteen years of age; of the wives three were fourteen and ten were fifteen years of age. In all these cases the parents' consent to the marriages was given, but the colonial Registrar-General is of opinion that the marriage of males under twenty-one years of age and of females under eighteen years of age should be made illegal. There were 14,874 births, of which 733, or 4·93 per cent., were illegitimate. The centesimal proportion of the total births to the mean population is 3·28; the corresponding number for 1894 was 3·19, but in all previous years as far back as 1856 it was higher. There were 133 cases of twin births—i.e., 266 infants born—and two sets of triplets. The general death-rate for 1895 was the lowest in the history of the colony, being only 11·38 per 1000 of the population; in 1894 the corresponding figures were 12·08. The death-rate in New Zealand is considerably less than in Queensland, having been under 10·4 per 1000 during each of the five years 1891-95 inclusive. The actual number of deaths in Queensland during the year was 5152, the three diseases of highest fatality being phthisis, pneumonia, and diarrhœa, the deaths assigned to each of which numbered 420, 299 and 233 respectively. There was no fatal case of small-pox; the deaths assigned to some other diseases of the zymotic class were as follows: 2 to measles, 1 to scarlet fever, 72 to enteric fever, 128 to whooping-cough, and 67 to diphtheria.

THE PUBLIC HEALTH IN THE THIRD OR SUMMER QUARTER OF 1896.

The exceptional heat in July last was followed by an unusually cold August and a remarkably wet September, during which the rainfall was equal to more than half the amount measured in the preceding eight months of the year. The duration of recorded bright sunshine, which exceeded the average by 18 per cent. in July, was respectively 53 and 37 per cent. below the average in August and September. On the whole these meteorological conditions do not appear to have been unfavourable to the public health, as the Registrar-General reports, in his quarterly return for the third quarter of this year just issued, that the annual death-rate in England and Wales did not exceed 16·3 per 1000, against 16·8, the mean rate in the ten preceding corresponding quarters. In the mainly urban population of nearly 21,000,000 the death-rate in the quarter was equal to 17·6 per 1000, while in the remaining and mainly rural population of nearly 10,000,000 it did not exceed 13·7 per 1000. The rates in the thirty-three great towns showed a far wider range; the rate was only 13·5 in Croydon and 14·7 in Swansea and in Halifax, while it was 22·0 in Manchester, 22·9 in Liverpool, and 23·8 in Salford. The mortality from diarrhœa practically governs the death-rate in the third or summer quarter of the year, and the exceptionally high temperature in July last caused a generally high rate of mortality from infantile diarrhœa, which was only partially counterbalanced by the cold August and the wet September that followed. Infant mortality during the quarter, measured by the proportion of deaths under one year to registered births, compared with the mean proportion in the ten preceding summer quarters, showed an excess of 7·2 per cent., whereas the mortality of persons aged between one and sixty years and of persons aged upwards of sixty years was respectively 5·9 and 4·8 per cent. below the same average. The mean proportion of infant mortality in England and Wales during the quarter was 178 per 1000, and 12 above the average; it ranged from 71 in Huntingdonshire and Wiltshire to 229 in the East Riding of Yorkshire and 241 in Warwickshire. Thus in equal numbers born more than three infants died during the quarter in the East Riding and in Warwickshire to one in Huntingdonshire and Wiltshire. The range of infant mortality was nearly as wide among the thirty-three great towns—namely, from 133 in Halifax to 286 in Leicester, 291 in Birmingham, and 296 in Salford. York and Aberdare, among other large towns, showed the appalling infantile death-rates of 301 and 323 per 1000. The mortality from diarrhœa, which is the most powerful factor in the causation of these excessive rates of infant mortality, does not entirely explain their wide variations. Diarrhœa fatality, moreover, was below the average for the season, while, as we have seen, infant mortality showed a marked excess. We have as yet had no satisfactory explanation of the extraordinary and practically constant variation in diarrhœa mortality in different towns. During last quarter the annual death-rate per 1000 from diarrhœa in the thirty-three towns was 0·34 in Halifax, 0·81 in Swansea, and 0·84 in Huddersfield; it ranged upwards to 3·77 in Birmingham, 4·36 in Wolverhampton, and 4·67 in Leicester. We are equally in the dark as to the cause of the low diarrhœa death-rate in the Yorkshire manufacturing towns, and as to the explanation of the constantly high diarrhœa-rate in Leicester, a town which continually shows an abnormally low death-rate from all causes. Diphtheria mortality continues abnormally high, the death-rate from this disease last quarter being almost twice as high as that caused by scarlet fever. Only 14 fatal cases of small-pox were registered in England and Wales last quarter, of which 6 occurred in the city of Gloucester. It is very satisfactory to be able to note that the English death-rate in the first nine months of this year averaged only 16·8 per 1000, and scarcely exceeded the rate in the same period of 1894, the "record" year, in which the death-rate was so far below that which prevailed in any previous year. Should there be a mild November and December the English death-rate in 1896 will but slightly exceed the unprecedentedly low rate in 1894.

THE SERVICES.

ARMY MEDICAL STAFF.

SURGEON-CAPTAIN FOWLER has left Leeds for duty at the Station Hospital, York. Surgeon-Captain Clark has embarked for India, and Surgeon-Colonel Crew, D.S.O., is under orders to proceed to India. Surgeon-Captain Long has proceeded to the Straits Settlements. Surgeon-Captain R. Holyoake has arrived in London from Norwich for a course of operative surgery, and Surgeon-Captain T. W. Richardson, Militia Medical Staff Corps, has assumed Medical Charge of the Cavalry at Norwich during his absence.

Surgeon-Major Edward Richard Power, M.B., retires from the service receiving a gratuity.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Captain J. H. Farmer, A.M.S., Nowgong, is appointed to the Medical Charge of the Bundelkhand Political Agency, in addition to his military duties. Surgeon-Major McGill, A.M.S., on arrival from England, is posted to the Mhow District. Brigade-Surgeon-Lieutenant-Colonel G. Massy, Bengal Establishment, is permitted to retire from the service. Surgeon-Captain C. E. Williams is transferred from Akyab to Yamethin, and is appointed to the Civil Medical Charge of Yamethin District in the place of Surgeon-Captain Stewart, who proceeds on leave. Surgeon-Lieutenant-Colonel J. McCloghry has delivered over charge of the Rajkote Prison. Surgeon-Captain E. G. B. Whitecombe has been appointed Civil Surgeon, Jacobabad, in addition to his own duties. Surgeon-Captain W. H. B. Robinson (Bengal) has assumed Medical Charge of the Ulwar Agency from Surgeon-Major W. H. Neilson, M.B.

NAVAL MEDICAL SERVICE.

The following appointments are announced:—Staff-Surgeons: H. W. G. Doyne to the *Boscawen*, additional for *Minotaur*; A. S. Nance to the *Dreadnought*; and Jeremiah Sprague to the *Mohawk*. Surgeons: T. Austen and R. J. MacKeown to the *Ramillies*, additional; R. A. Fitch and E. B. Pickthorn to the *Nelson*; J. Chambers, to the *Beagle*; A. R. Bankart to the *Surprise*; E. P. Tuck to the *Jackal*; and Charles Stickland to the *Buzzard*.

VOLUNTEER CORPS.

Artillery: The Highland: Richard Gregor Dick, M.B., to be Surgeon-Lieutenant. 1st Shropshire and Staffordshire: Surgeon-Captain E. Cureton to be Surgeon-Major. *Rifle*: 1st Volunteer Battalion the Lancashire Fusiliers: James Will Cook, M.B., to be Surgeon-Lieutenant. 1st Roxburgh and Selkirk (the Border): Surgeon-Captain J. S. Muir, M.B., to be Surgeon-Major.

THE CUBAN OUTBREAK.

According to official information from Cuba there seems to be a large amount of sickness in the Spanish force. The number of patients in the hospitals is between 13,000 and 14,000, of whom only 755 are wounded; the remainder are suffering from various forms of fever, dysentery, and other diseases. About 13 per cent. of the Spanish force are in hospital. The mortality is, however, only 3 per cent. of the sick. The Director General of Hospitals has represented the inadequacy of the medical staff and means at his disposal. At Havana, for example, it is stated that there are only fifty-one medical officers to attend upon over 8000 sick and wounded. The difficulty of keeping up the lines of communication between the different columns and the base and of convoying the sick from distant places amidst a hostile population is very great. The amount of invaliding is large, the mail steamers to Spain bringing numbers of sick, and a subscription has been started for their relief. Recruits and conscripts are being forwarded to Cuba. It is estimated that by the end of the year the total number of soldiers sent to Cuba will represent a force of nearly 200,000. The cost to the Spanish Government of repressing this insurrection in Cuba must be enormous, and the object still seems to be far from being accomplished.

THE MEDICAL OFFICERS OF THE EGYPTIAN ARMY.

Sir H. Kitchener in his dispatch on the late Soudan campaign and the capture of Dongola referred to the services of the medical staff attached to the Egyptian army as follows:—"The resources of Surgeon-Lieutenant-Colonel T. J. Gallwey, Principal Medical Officer, and the six British medical officers of the Egyptian army, were strained to the utmost in coping with the sudden and unexpected outbreak of cholera amongst the troops. Owing to the prevalence of the epidemic in Egypt all hope of assistance from there was cut off, and it was only by their untiring energy and incessant devotion to duty that the disease was successfuly stamped out and many valuable lives were saved, though I regret to record the loss by cholera of one of their number, Surgeon-Captain Trask. All officers of the Medical Staff worked indefatigably throughout the various other phases of the campaign."

Estate duty has been paid on £24,902 as the net value of the personal estate of Sir William James Moore, of 15, Portland-place, K.C.I.E., Surgeon-General in the Indian Medical Service, Hon. Physician to the Queen, who died on Sept. 9th, aged sixty-eight years.

The Greenwich Hospital Pension of £80 a year, rendered vacant by the death of Inspector General Charles M'Shane, has been awarded to Inspector General of Hospitals and Fleets Maxwell Rodgers, M.D.

Correspondence.

"Audi alteram partem."

THE LONDON WATER-SUPPLY AND ITS BACTERIAL CONTENTS.

To the Editors of THE LANCET.

SIRS,—The report recently issued by the London County Council, to which you refer in a leading article in THE LANCET of Nov. 7th, so urgently demands the attention of all who are interested in the application of bacteriological science to questions of practical hygiene that I would venture to offer the following remarks on the document which is now in the hands of the public.

The matter requires a few words of historical retrospect. Fifteen years ago it was the opinion of those who believed in the conveyance of zymotic disease by means of bacteria that the process of sand-filtration as practised at numerous waterworks could be of little hygienic value, as it seemed on *a priori* grounds almost incredible that such minute objects as bacteria could be retained by such an apparently coarse fabric as an ordinary waterworks filter. This was certainly my attitude of mind when (in 1884) I commenced the systematic study of filtration and other water purification processes by means of Koch's cultivation methods of detecting and numerically estimating bacteria—methods which for the first time enabled these preconceived ideas to be submitted to the test of actual experiment. These investigations soon convinced me that the low estimate which had hitherto been formed of the value attaching to such purification processes as storage and sand filtration required profound modification, for I was already able in 1885 to show in monthly reports which I made to the Local Government Board what a very large percentage of the bacteria present in Thames and Lea water was removed by storage and filtration before these waters reached the consumer. These results were not only fully confirmed by my subsequent examinations, continued over more than three years, of the Thames and Lea waters, as well as by similar examinations which I made of other water-supplies submitted to the same treatment, but they have been endorsed by the results of all observers who have made such investigations, whether in this country, on the Continent, in America, or any other part of the world. The removal of from 90 to nearly 100 per cent. of the bacteria present in the raw river water by means of storage and filtration, regarded with astonishment and almost scepticism when I communicated my results to the Society of Chemical Industry and the Institution of Civil Engineers in 1885 and 1886, has now for years past been one of the accepted doctrines of hygiene. The question naturally arises, How are my results and those of the numerous investigators who have confirmed them to be harmonised with those recently obtained on behalf of the London County Council?

In pursuing this inquiry it will only at present be necessary to refer to the results obtained by two out of the four gentlemen who have made bacteriological examinations of the London water for this public body.

The most striking results are unquestionably those furnished by Dr. Klein, whose examinations were made during the months of January and February, 1895, and who records his discovery of enormous numbers of bacteria, amounting in one case to upwards of 50,000 in a single cubic centimetre of the filtered water. It is suggested in your leading article that these large numbers may be accounted for by the fact that the waters examined had been filtered during a period when severe frost was prevailing. That the number of bacteria in the filtered water probably was in many cases exceptionally large during this period of time I am quite ready to admit, for in my examinations made in the winter of 1885–6 and in subsequent winters I already found and drew attention to the unusually large number of bacteria present at these seasons. Subsequent investigations, both in London and elsewhere, have confirmed these results, and it is quite easy to understand that during severe frost filtration is carried on under difficulties through the disturbance of the filter beds by the formation of ice, as pointed out in a paper which I read at the recent Sanitary Congress at Newcastle.

That the alarmingly large numbers of bacteria found in the filtered water by Dr. Klein are not to be accounted for by supposing that the filters were really during this period yielding a highly impure filtrate is shown by a comparison of his results with those obtained by Mr. Dibdin. The latter gentleman was also engaged on similar examinations not only during January and February, but throughout the whole of 1895. If, then, these unprecedentedly large numbers of bacteria found by Dr. Klein had really been present in the filtered water during January and February, 1895, they should surely have been discovered also by Mr. Dibdin, but they were not. There is nothing remarkable in Mr. Dibdin's figures for 1895; they present no novel feature whatever. On the contrary, they show that nearly the whole of the bacteria present in the unfiltered water were being removed before distribution. Even in the water of the Southwark Company, in which Dr. Klein found 51,000 bacteria per cubic centimetre, Mr. Dibdin found only 838 and 545 in January and February respectively, corresponding to a removal of 94·5 and 98·1 out of every 100 bacteria present in the unfiltered water—results which are, therefore, in precise harmony with mine of ten years previously and in accordance with the generally accepted views of to-day. But looking at Dr. Klein's results again we find the still more startling record of 20,000 bacteria found in one cubic centimetre of the Kent Company's water. Indeed, so novel, unaccountable, and revolutionary are his results obtained with this water, which, be it remembered, is exclusively derived from deep wells in the chalk, that I would quote them *in extenso*. Dr. Klein examined eight samples of this water in eight successive weeks of January and February, 1895; in these samples he found 2684, 1844, 1772, 5503, 684, 124, 592, and 20,576 bacteria per cubic centimetre respectively. These figures cannot be accounted for by any interruption in the process of filtration occasioned by the severe frost which was then prevailing, for the water of the Kent Company is submitted to no filtration at any time. Nor do these results again find any confirmation at the hands of Dr. Klein's colleague, Mr. Dibdin, who in examining the same water found only 89 and 80 bacteria per cubic centimetre in January and February respectively, whilst his average for the entire year is 90 per cubic centimetre, a result agreeing very closely with my original results of ten years earlier and confirmed by all subsequent observers. But normal and intelligible as are Mr. Dibdin's figures for 1895, differing as they do entirely from those obtained by Dr. Klein, there are also published in the same report results of bacteriological examinations made by Mr. Dibdin in 1891–2, and these are hardly less remarkable than Dr. Klein's. Thus the average number of bacteria found in one cubic centimetre of the several waters by Mr. Dibdin in 1891–2 are given as follows:—Kent, 4795; Southwark, 4594; Lambeth, 4626; Chelsea, 3091; Grand Junction, 2612; West Middlesex, 2534; New River, 2299; and East London, 3387.

That these figures represent the average number of bacteria present in the waters supplied by the several companies is altogether beyond the limits of possibility, and I have no hesitation in saying that nobody who has made a special study of the bacteriological examination of water will give them credence even for a single instant. How, then, it will be asked, have these numbers been obtained, for of course there can be no doubt that these gentlemen actually discovered on their plate cultivations the remarkably large number of colonies they have recorded in their reports? It is obviously for these gentlemen to furnish an explanation as to why their results are so out of harmony with those obtained by all other observers as well as why they are so utterly irreconcilable among themselves. These explanations are being awaited by that section of the scientific world interested in the bacteriology of water with much curiosity; in the meantime, I would point out that the report is extraordinarily reticent as to the origin, mode of collection, and subsequent treatment of the samples which were submitted to these efforts. Beyond the statement that the samples were collected from the mains and supplied to Dr. Klein in Winchester quart bottles there is no information on these points. A report which is intended to show the erroneous character of the results obtained and conclusions drawn by all previous observers should, I conceive, have left no loophole for doubt as to the samples having been collected and treated in a manner which was altogether above suspicion. But with regard to this point the experts appear to have either concerned themselves very little or to have presumed that the readers of their report would be too ignorant to inquire into such matters. I imagine, however, that there will be not a few readers at the present time anxious to know, amongst many other points, whether these samples were collected in duly sterilised vessels; whether the collector was always, or ever, a duly qualified person fully alive to the sources of error, which at its very origin may affect such an investigation; whilst, above all, what was the time which was allowed to elapse on each occasion between the collection of the samples and the preparation of the plate cultivations.

I am, Sirs, yours truly,

PERCY F. FRANKLAND.

Mason College, Birmingham, Nov. 9th, 1896.

*** While Dr. Percy F. Frankland correctly and very properly points out that the County Council's report is "extraordinarily reticent as to the origin, mode of collection of the samples," &c., he omits to deal with the very important results in the report from which "it is evident that the *suspended matters* [the italics are ours] present in the companies' filtered supplies approximate more or less nearly in character to those in the unfiltered river water at the companies' intakes." And, again, what of the animalculi, cotton fibres, and epidermic tissue in addition to the bacillus coli which Dr. Klein found? It seems to us that these results alone afford substantial evidence at one time of the inefficiency of filtration quite apart from the purely bacteriological results. Dr. Klein has, however, since disposed—in a letter in the *Times* of Nov. 12th—of any question as to the methods adopted for securing samples for bacteriological experiment. He there states that the specimens were obtained from various hydrants by an expert under his direction in a manner which was decided upon after a consultation with Dr. Dupré, Dr. Stevenson, and Mr. Dibdin.—ED. L.

THE DOSAGE OF ANTITOXIN.

To the Editors of THE LANCET.

SIRS,—Although antitoxin has been in use for some little time there still seems to be some uncertainty as to the doses required at different ages. At present there are three varieties of serum in use in this country—that prepared at the British Institute of Preventive Medicine after Dr. Ruffer's process, which is a modification of Roux's; Aronson's; and Behring's. I obtained some of the first variety a little time ago from Messrs. Allen and Hanbury. The directions furnished are that 10 c.c. is the dose for a child. This is to be injected into the abdominal wall. The quantity is so large that one hesitates to use the serum for an infant, as it forms a small tumour under the skin and does not disperse very quickly. Aronson's, which I prefer to use (if only for its smaller dose), is supplied with a 5 c.c. syringe, that being the dose for a child with diphtheria if the treatment is commenced early. Behring's antitoxin is, I believe, injected in much smaller quantities, and this is a distinct advantage if the effect is as satisfactory as with the larger doses mentioned above. I am aware that the serum supplied by the Institute of Preventive Medicine does not cause inflammation or suppuration. To inject 10 c.c. into a baby

suffering from so exhausting a disease as diphtheria seems inadvisable if a smaller dose will be equally effective. Dr. Klein introduced a serum which gave good results—I think in adults—in doses of from 5 to 10 c.c. Professor Fraser proposed that antitoxin be prepared as a powder. Cannot we have a serum with a maximum dose for young children of, say, from three minims to five minims, or a powder in the form of hypodermic tabloids resembling those of strychnine, ergotine, &c., which are in daily use?

I am, Sirs, yours faithfully,

HERBERT W. G. MACLEOD, M.D. Edin.,
late H.M. I.M.S.

Brixton-road, S.W., Nov. 2nd, 1896.

*** Our correspondent in drawing attention to the question of the dosage of antitoxin has placed his finger on the weak points in the present system of sending out antitoxic serum. He states that he prefers Aronson's serum because the dose of 5 c.c. is a manageable one, especially in the case of infants; but what guarantee has he that, in giving Aronson's 5 c.c., he is injecting any more of the active material than if he were injecting the same quantity of serum obtained from the British Institute of Preventive Medicine? All dosage must be calculated in units and not in quantities of serum, and until the unit system be adopted little reliance can be placed on statements made as to the quantity of antitoxin used. 10 c.c., however, is not a large dose to inject, even into an infant, in whom absorption or diffusion takes place very rapidly. The serum now made is undoubtedly much stronger than it was last year and the quantity of serum required to be injected to obtain the same results is correspondingly less. The powder antitoxin has up to the present proved to be somewhat unsatisfactory. Great efforts, however, are being made to obtain the antitoxin in a more concentrated form and no doubt our correspondent will, ere long, have some of his desires in regard to dose and elegance of exhibition partially, if not fully, gratified.—ED. L.

"ELECTION OF DIRECT REPRESENTATIVES TO THE GENERAL MEDICAL COUNCIL."

To the Editors of THE LANCET.

SIRS,—You and your readers must be struck with the fact that the correspondence on this subject is very monotonous both in limitation of area and in authorship. Of the 22,000 medical practitioners in England and Wales perhaps twenty have contributed to this literature—and these either candidates or their henchmen,—and even those deal with the mere fringe of questions to be dealt with by the General Medical Council. We can only believe that the profession is awaiting with quiet dignity its appointed duty, and we may hope that it will elect three gentlemen with such unanimity as to give them some power and influence in the Council. I am unwilling to add to the monotonous literature of which I have spoken, but I shall ask your leave to refer for a moment to Mr. Rivington's letter in THE LANCET of Nov. 7th and to quote a paragraph or two from my manifestos which I think he can scarcely have seen. Otherwise I cannot doubt that instead of expressing a half agreement with me he would have expressed a practically complete concurrence. The first quotation is from my address, which you kindly published in THE LANCET of July 11th, and the second is the abstract of what I said on the same subject in a speech at Manchester, reported by you in THE LANCET of Sept. 26th. The italics are my own.

"The question of midwives is being clarified by discussion. All are agreed that the lives of poor women must be guarded from the coarse risks of the perilous ignorance of so-called midwives. *While I feel this very strongly I am fully alive to the importance of maintaining the principle of the Act of 1886, that midwifery is one of the three branches of the art of medicine, and that those who are not qualified in the other two can only act* subordinately to members of the medical profession. And my endeavour shall be in regard to any legislation with respect to midwives to secure the clear recognition of this principle."

You report my speech at Manchester as follows:—

"Dr. Glover stated very explicitly his views on the question of midwives on which there was now a general consensus of opinion. All agreed now that something must be done to protect the lives of poor women from the risks of being attended by midwives entirely untrained and ignorant of the first elements of puerperal safety. *His idea was, and always had been, that the training needed for this class of women should be of a modest and limited character, enabling them to act as midwives or midwifery nurses—he did not care what they were called—who should act only in safe cases and in all others be required to send for a medical man.* He entirely disapproved of the proposal which was advocated by some—of midwives or nurses of three years' training. This would not meet the case of poor women, which was the very case to be met. And it would not only create a class of nurses too costly, but a semi-medical class, who would be real competitors with medical men for patients who can pay fees that medical men can afford to take."

I shall thank all my fellow candidates who do me the honour to quote my views to quote them in their entirety. To do otherwise would be to incur the charge of using this subject for mere election purposes and in an unfair way.

I am, Sirs, your obedient servant,

JAMES GREY GLOVER.

Highbury-place, N., Nov. 9th, 1896.

To the Editors of THE LANCET.

SIRS,—In reference to Dr. R. R. Rentoul's statement that I answered "Yes" to each and all of his questions it is due to my supporters and to myself that I should ask for the publication of my exact replies. It is not necessary to repeat the questions, which will be found in Dr. Rentoul's letter in THE LANCET of Nov. 7th.

ANSWERS.

1. Undoubtedly. To empower imperfectly qualified persons to attend "natural labour" might lead to the worst results, because medical and surgical complications, which such persons could neither foresee nor properly treat, may arise in any case at any moment. No case, therefore, can be described as "natural" until it is normally concluded.

2 Confining myself strictly to the hypothetical cases which you put and to general principles I should say "Yes."

3. Unless a particular instance of such conduct were judged to be a case of infamous conduct in a professional respect I do not see how the General Medical Council could either censure the individuals concerned or inflict penalties. The exact amount of any penalty must be determined judicially at the time when the case comes before the Council. I think it would be advantageous if in cases short of infamous conduct but professionally objectionable the Council were expressly empowered to warn and censure and if this warning or censure were disregarded to suspend the delinquent.

4. If elected to the General Medical Council I should feel bound to resign my seat if I changed my views on any important question or if my actions in the Council were opposed to the views and intentions contained in my election address.

5. My answer to Question 1 supplies the answer to Question 5.

As I am writing upon the midwifery question I should like to take the opportunity to do an act of justice to Dr. Robert Barnes. In my address to the registered practitioners of England and Wales, published in THE LANCET of Oct. 10th, I described the resignations of the three examiners in midwifery at the Royal College of Surgeons of England in 1876 as "spirited." In using this epithet I was under the impression that the resignations were simultaneous and the result of concerted action, because the three examiners equally received the thanks of the Obstetrical Society for the course which they had pursued in the interests of the profession. On further inquiry, however, I find that the chief credit of the resignation and the title to the resignation being described as "spirited" belong to Dr. Robert Barnes. From the first Dr. Barnes declined to examine "persons" who were unable to obtain any other qualification in the United Kingdom than the Midwifery Diploma of the College, on the strength of which they would have been entitled to register under the Medical Act. The two other examiners appear to have had some hesitation, for I find from the Council minutes, to which Mr. Trimmer has kindly referred at my request, that on March 10th, 1876, a letter dated the 15th of that month from Dr. Robert Barnes resigning his appointment as a member of the Board of Examiners in Midwifery was read, and that the resignation was accepted. I further find that at the quarterly meetings of the Council on April 13th, 1876, a joint letter dated March 22nd, 1876, was read from Dr. Arthur Farre and Dr. (now Sir) W. O. Priestley resigning their appointments as members of the board, and that the resignations were accepted. These facts alone show that Dr Robert Barnes played the leading part, and I am very glad to have an opportunity of according to him that credit to which he is so justly entitled. It is remarkable

that the profession should now be exposed to a danger very similar to that from which the prompt and decisive attitude of Dr. Robert Barnes in 1876 preserved it, and if it is again enabled to surmount it the main credit will be due to Dr. Robert Reid Rentoul.—I am, Sirs, yours faithfully,

Wimpole-street, W., Nov. 7th, 1896. WALTER RIVINGTON.

To the Editors of THE LANCET.

SIRS,—The Liverpool Medical Club made excellent arrangements for those who were aspiring to represent the profession as direct representatives on the General Medical Council to address the practitioners of Liverpool and neighbourhood. Several of the candidates attended and were received with the utmost hospitality and courtesy. The club formulated a number of questions, which were submitted to all who addressed the club, and I had the honour of speaking to the members and answering the questions. It will astonish most of the candidates to find Dr. Rentoul now claiming, as he does in the *Medical Times and Hospital Gazette* of Nov. 7th and in THE LANCET of Nov. 7th, these questions "as his own," and the question must be answered definitely: (*a*) Did he originally formulate these questions? and (*b*) did he make the Liverpool Club the medium of firing off his bullets?

So far as I am informed the Liverpool Club did not intend to act as the intermediary between Dr. Rentoul and the other candidates, but I trust the club will take some notice of the questions we have put, so that we may have an official pronouncement. Dr. Rentoul took upon himself the duty of catechist and asked me before the Liverpool meeting on Oct. 27th to answer a certain number of questions. I replied courteously that it did not appear to me desirable for one candidate to cross-examine another, and I absolutely declined to answer any question from any candidate on any subject. To my surprise, and to the surprise of most of the members of the Liverpool Club, the questions submitted by Dr. Rentoul were the same as those submitted by the Liverpool Club to the candidates who had appeared before the club. I openly told the meeting what I had replied to Dr. Rentoul, and I answered the questions put to me by Dr. Adam as follows:—

(*a*) "Will you actively oppose any action, whether taken in Parliament or elsewhere, which has for its object the establishment of an inferior order of midwifery practitioners, empowered to conduct, on their sole responsibility, and without the immediate supervision of a registered practitioner, even natural labours?"

Yes.

(*b*) "Will you urge the Medical Council to rule it 'infamous conduc in a professional respect,' whenever any medical practitioner or practitioners (other than those now empowered by the Medical Act, 1886) grants any instrument which professes to empower its holder to practise any part or branch of the practice of midwifery, or of surgery, or of medicine, or of dentistry, and so spuriously quality either midwives or bone-setters or medical herbalists?"

(*c*) "In default will you urge the Medical Council to censure such practitioner for the first offence and to erase his name from the Medical Register for two years for a second or subsequent offence?"

"Questions *b* and *c* run together," I said. "If the Council pronounces judgment on the issuing of diplomas, and professional men refuse to obey the ruling of the Council, the judgment of the Council must be enforced by punishment. What that punishment may be must be left to the Council."

(*d*) "If elected to the Medical Council, will you agree to resign your seat should you change your views upon the above question of the registration of midwives, and thus supply the means of testing the opinion of the profession upon this vital question."

Absolutely "No."

(*e*) "The Lancashire and Cheshire Branch of the British Medical Association—through Dr. S. Woodcock—has adopted a draft 'Midwifery Nurses Bill,' by which it is proposed (in Clauses 2 and 4) to give, not only all midwives, but also all existing and future midwifery *nurses* as well, power to conduct, independently of medical practitioners, all natural labours. Will you actively oppose such a draft Bill?"

Yes.

It will be seen at a glance that Dr. Rentoul's questions are identical with those of the Liverpool Club. I can only say that Dr. Rentoul, in his article in the *Medical Times and Hospital Gazette* and in THE LANCET of Nov. 7th, has been guilty of the old fault—viz., *suppressio veri et equivicatio falsi*. Dr. Rentoul *knew* I had answered the questions at the Liverpool Club. I did not refuse to answer definite questions on the Midwives Bill; I refused to be cross-examined by Dr. Rentoul or any other candidate. Dr. Rentoul writes to me: "Believe me, I think this midwives question of much more moment than the whole thirty seats on the Medical Council." Of course, if this is his attitude I may pardon his over-zeal, but I think too much of the intelligence of the electors to imagine for one instant that this view will be generally shared. I set out with the intention in this election of not expressing any opinion on the views of individual candidates, and I regret I have been compelled to abandon this attitude. I have for years recognised the importance of these Midwives Bills. In January, 1891, and again in April, 1891, in the *Provincial Medical Journal*, I dissected the old Midwives Bill, and I used the words which have now passed into common acceptance and been taken up by others—"We must end the midwife and herald in the obstetric nurse." I have always recognised most fully the efforts of Dr. Rentoul on this midwifery question, and he has received a full measure of support from my pen, and he has also been supported by many other earnest workers. I cannot, however, allow Dr. Rentoul to assume the position of medical dictator on this question and to pose as the only champion in the interests of parturient women. I must assure the profession that it need not look to Dr. Rentoul alone for guidance, and that my attitude on this midwifery question is based on the highest view possible—viz., the protection of the public from incompetency and ignorance. The electors will bear in mind all the great questions affecting the whole profession at the present time, and I trust will vote for candidates who are broad-minded, sober in judgment, experienced, and who have some knowledge of men and manners.—I am, Sirs, yours truly,

Nov. 11th, 1896. T. M. DOLAN.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Oct. 31st Dr. Brassey Brierley concludes a very lengthy epistle with the following remarks: "I am not aware that Mr. Walter Rivington has ever done anything towards reforming medical institutions," &c. I am sorry Dr. Brierley is so grossly ignorant of medical politics. It is apparent he has not read the medical journals for the last few years. Had he done so he would have known that for the last ten years Mr. Rivington has, at the cost of his own personal advancement, advocated in the strongest manner possible the claims of the Members of the Royal College of Surgeons of England and so reform that great institution. This alone should entitle him to the gratitude of all Members of the College.

I am, Sirs, yours respectfully,

Chiswick, Oct. 10th, 1896. JOSEPH SMITH.

To the Editors of THE LANCET.

SIRS,—In THE LANCET and the *Medical Times and Hospital Gazette* of the 7th inst. a letter was published from me containing questions and answers upon the so-called registration of midwives. The first of these questions was:—

"Will you actively oppose any action, whether taken in Parliament or elsewhere, which has for its object the establishing of an inferior order of midwifery practitioners, empowered *to conduct on their sole responsibility* and without the *immediate* supervision of a registered practitioner even natural labours"? To this question on Oct. 24th Dr. Alderson emphatically answered "Yes." Now, however, a printed election card, signed by Dr. Alderson and dated Oct. 30th, has been sent to me in which he says that he is "opposed to the so-called registration of midwives, *but* advocates the supervision and control of their *practice* by medical men." Therefore in these two statements Dr. Alderson distinctly contradicts himself. The strong feeling of those who have, and now do, oppose midwives legislation is embodied in the following points:—

1. That existing midwives should not be interfered with.
2. That no more midwives should be created.
3. That the General Medical Council should rule the granting of documents to persons who act as midwives "infamous conduct in a professional respect."
4. That the existing means of supplying poorer women and the wage paid classes with the services of medical practitioners by means (*a*) of the Poor-law medical service, (*b*) voluntary medical charities, (*c*) maternity clubs and provident dispensaries, and (*d*) by practitioners who charge from 10*s.* to 15*s.* midwifery fees are amply and more than amply sufficient. This is our belief, and we mean to stick to it. Let those candidates who disagree with it speak out and

honestly say so. I would commend to voters the sterling and honest language used by Mr. Rivington when speaking upon this question of the proposal to hand over our midwifery practice in these more than hard times to midwives. With him evidently language is not used to enable him to "wobble" or "sit upon the fence." He has well stated that the Medical Act, 1886, contains our chartered rights. Let us then defend them. I am, Sirs, yours faithfully,

Nov. 5th, 1896. ROBERT R. RENTOUL.

To the Editors of THE LANCET.

SIRS,—Are we not, in the excitement of a coming election, in danger of not perceiving a great opportunity? The election itself is merely a means whereby the profession is able to send five gentlemen to represent it in the General Medical Council of thirty. These five gentlemen will be duly elected and will be duly seated at the Council board. What then? Will their force enable them to accomplish what the profession wants? Probably not. Whether they sit with mild dignity or in severe anger they will be in company with other gentlemen who form a perfect phalanx, well and practically acquainted with the powers of the Council, having its history well in their memories, and all of them very properly desirous of sustaining the interests of the corporations they represent, while at the same time they are ever ready to lend a helping hand to our common profession when they feel they can. Any less favourable opinion of the Council would neither be worthy of them nor of us. The practically permanent members are fulfilling the purposes of the Act of Parliament which made them the chief constituents of a Council of Medical Education and Registration. Mark the words. But the profession's needs appear to have outgrown the Council's powers; our crown is too small for our head. The professional executive is not strong enough and has not been sufficiently endowed; its movements are slow and its adaptability insufficient. That this is so becomes increasingly evident as time goes on, and concurrently there is increased sensitiveness in the Council chamber as the sound of complaints and of hot words reach it from out-of-doors. For there has been a movement in the "valley of dry bones"; these have become an exceeding great army, instinct with life, speaking words, and showing restlessness and discontent. Let not this host even think of attacking the General Medical Council. This would be unfair and would do wondrous little good. Let it rather attract the Council to itself, and with a carefully prepared and comprehensive object, approved in Oxford-street, pass under the Council's leadership to Westminster. If, however, the Council, after due and proper consideration, feel unequal to this, it will then be quite time enough with suitable organisation and under efficient leadership to consider the propriety of going to Parliament alone. This, however, ought not to be, for the profession, the corporations, and the Council are surely at one, and all should march to the tryst—which is not alone the good of the profession, but the welfare of the people. Will Parliament listen? Yes, if we approach it with the force of numbers, and with zeal tempered by discretion show it a well-defined and good purpose. Parliament thus wooed will be found quite placable, and in a reasonable time, but certainly not at once, we shall have accomplished a splendid change with the dignity which is inherent in, and which will always be manifested by, our profession.

I am, Sirs, yours faithfully,

Kenley, Surrey, Nov. 9th, 1896. E. DIVER.

To the Editors of THE LANCET.

SIRS,—Had Mr. Walter Rivington made himself acquainted with the articles I referred to in my letter of Oct. 31st, probably he would not have written so hasty and angry a reply, because he would have found what he calls my "astonishing accusations" were simply statements of fact open to review by any practitioner who chose to look them up, and I desire distinctly to state here that I have no intention of entering into personal conflict with any individual candidate seeking a seat on the General Medical Council. I am aware that Mr. Rivington has been much engaged as a reformer at the Royal College of Surgeons of England, but work for a corporation can be hardly looked upon as a claim for the support of the general profession, and if my reference to him has been a cause of annoyance I regret it. It must be remembered, however, that it was not I who associated his name with any of the other candidates—a connexion which seems to have caused him some displeasure. Mr. Rivington's letter is also misleading; he states that Mr. George Brown has "disclaimed any concurrence" in the views expressed in the nurses' scheme I referred to. This disclaimer was made at a meeting held in Manchester on Oct. 21st, at which I am told fifteen practitioners were present, and was only made public in the journals on Oct. 31st, the day my letter appeared. But Mr. Brown, in his reply to my letter, goes further; he disclaims the attitude of the *Medical Times and Hospital Gazette* towards this question. Now Mr. Rivington accepts Mr. Brown's assurances. In the *Medical Times and Hospital Gazette* the following notice appears every week: "For all matter that appears in this official column the Central Council and its officials are responsible. For all matter appearing in other parts of the journal the entire responsibility rests with the editors."

Now Mr. Brown's bald statement that he is a member of the staff is somewhat misleading seeing that he is part owner of the paper, one of the two editors who share the entire responsibility, and there is no reference board. None of the articles to which I have referred appear in the official columns. On page 389 of the *Medical Times and Hospital Gazette* for June 20th, 1896, appears one of the many articles upon midwifery legislation, in all of which the "legal registration of all nurses" is strongly advocated; indeed, this journal has been flooded with editorial literature upon this question for a couple of years past, and it is difficult to believe that Mr. George Brown would acquiesce in the constant and persistent advocacy in a journal in which he has so large a share of a scheme of which he disapproves; how, therefore, does Mr. Brown explain his reasons for delaying his disclaimer until the eve of the election? In the *British Medical Journal* of Jan. 18th, 1896, page 157, will be found some interesting reading upon this subject.

I am, Sirs, faithfully yours,

Old Trafford, Nov. 10th, 1896. JAMES BRASSEY BRIERLEY.

To the Editors of THE LANCET.

SIRS,—Having read the addresses, appeals, and correspondence of the several candidates for direct representation I for one am at a loss to know for whom to vote unless by acting upon your advice in a recent issue. Some favour "midwives" and others "obstetric nurses," and all pose as reformers. One is inclined to say *cui bono?* and to ignore the lot. One thing is certain, the midwives are in possession, and the utmost that legislation can do is to "regulate" them. I happen to live in a metropolitan suburban parish which is blessed with at least half-a-dozen female caterers for obstetric favours, one of them being certificated and run by a local committee of influential ladies, who pay her a salary and charge 7*s.* 6*d.* per case to those requiring her services; the balance is made up of subscriptions and donations. A local practitioner is paid a guinea per case to follow her in cases beyond her skill, and these are few and far between. The writer was asked to perform this little service four years ago, but declined emphatically "to cover" this unregistered practitioner. Of course his neighbour did it with pleasure. The curious part of it is that this independent midwife, who was ostensibly engaged to attend "the poor," waits invariably on the well-to-do working-class and small shopkeepers' wives, and even those who are higher in social standing, the "poor" being still in the hands of the so-called "Gamps," who, by the way, are preferred before the woman of gown, bag, and parchment. The latter is above dressing the baby or doing a turn—"just comes and goes like a doctor"—while the handy neighbour does everything for 5*s.* If this parish is a sample of other metropolitan parishes men-midwives are doomed, and it would be interesting on the eve of the election for the ten candidates to issue a joint address saying how they will deal with this gross and crying evil and injustice. Of all others this is the most urgent question and it must be dealt with, but how!

I am, Sirs, yours obediently,

Nov. 3rd, 1896. RIVERSIDE.

"THE BATTLE OF THE CLUBS."

To the Editors of THE LANCET.

SIRS,—A meeting of the medical profession in Eastbourne was held on Oct. 20th to hear the first annual report of the Eastbourne Provident Medical Association. Mr. J. H.

Ewart presided, and there was a large and representative attendance. The report stated that the association was formed a year ago under the auspices of the Eastbourne Medical Society in order to combat medical aid societies and to provide efficient medical attendance for the working classes on lines acceptable to both the medical profession and the public.

The essential features of the association were mentioned in a letter published in THE LANCET of July 27th, 1895. Ten medical men gave in their names as willing to serve on the acting staff, this number including nearly all the medical men in the town who engage in club practice; and in the case of the remainder of the profession, all were agreed to give their moral support to the association by having nothing to do with the appointments offered, or the methods adopted, by the medical aid societies. The applications for membership of the association have been large and continuous, and on Aug. 31st, 1896, the members numbered 3689. The income of the association has correspondingly grown; the total sum received in members' payments for the year ending Aug. 31st was £607 4*s.* 10*d.* The working expenses for the past year have been about 18 per cent. of the money collected. The report went on to show that although the Medical Aid Society had not been crushed there was abundant evidence that it had been hard hit and, it was hoped, permanently crippled. It would be foolish to deny that we have had various difficulties to contend with in the working of our association; but considering the size of Eastbourne (population 42,000) and the large number of medical men in the town, the committee think that we may congratulate ourselves on our very large measure of success, and may commend our scheme to the notice of the profession in other towns. Our neighbours at Bexhill-on-Sea followed our example, and with slight modifications adopted our scheme, with the result that no medical aid society now exists in their town. I enclose you a copy of our rules, and remain, Sirs, yours faithfully,

ALEX. HARPER, M.D. Durh.,
Hon. Sec. Eastbourne Provident Medical Association.
Eastbourne, Nov. 10th, 1896.

"SEROUS HÆMORRHAGE."

To the Editors of THE LANCET.

SIRS,—The suggestion is put forward by Dr. A. E. Wright,[1] that as calcium appears to be essential to the firm clotting of milk, and that as one of the difficulties to be encountered in the use of cow's milk is its resistance to digestive processes by reason of this toughness of curd, therefore, seeing that the removal of calcium from actual combination with casein conduces to a more easily digested and friable curd, for that reason its removal could be used as a means of obtaining somewhat more satisfactory results in the sick room and nursery. Whatever may be the merits or demerits of such a procedure in the sick room, where perhaps it need only be practised for a more or less short period, the suggestion for its use in the nursery certainly opens up a vast field of material for very vigorous and animated controversy. Granted that it is well established that the toughness of the curd is a main factor, and supposing there be no other equally potent agent at work, then the suggestion of decalcification of milk opens out an apparent escape for many of us under certain difficulties, and is one that would find support, as instance the inquiries of Dr. Christian Simpson with regard to the correct proportions of acetate of ammonia necessary to throw out the phosphate of calcium from integral combination with casein. That there are many more objections than points in favour of the proposed decalcification of milk seems on mature consideration to be undoubted. If these objections are invalid and useless, and will tend to hinder the more advanced and scientific methods of infantile nutrition, then the sooner we parade certain of them and if possible relegate them to the realm of antiquities the better, and it is entirely actuated with this desire that I think the matter of sufficient importance to the infants and young children whom we may eventually decide to feed with so-called decalcified casein and in order to have the coast clear that I now bring forward such objections as suggest themselves to my mind by reason of special interest in the matter of milk and infantile nutrition generally. For purposes of brevity in what should otherwise require an encyclopædia let us superficially touch on the various points bearing on the proposition.

It has long been established that calcium phosphate is essential to the proper clotting of casein. Yet equally so will similar salts of barium, strontium, and magnesium suffice. Why, then, should calcium have been given preference by nature? Cow's milk differs from human milk according to certain well-known features as to its casein when clotted. A vast deal more adults are found incapable of digesting pure cow's milk than are infants. The stomachic juices of the calf abound in "rennin," that of the infantile stomach contains relatively very little "rennin," and in some adult stomachs, according to some authorities, is nearly absent (Hammarsten, Schumberg, Zweifel, and Roberts). A calf is born relatively fifteen months older than an infant. Consequently, is it any wonder that there is a greater preponderance of casein and calcium in cow's than in human milk. Very few premature calves, who would at birth be equal to a full-time, new-born infant, are able to subsist on their mother's milk and nearly always promptly die. Now seeing that cow's milk is, metaphorically speaking, fifteen months older than a new-born infant, if we make cow's milk fifteen months younger than it is, we at once reduce the casein and proportion of calcium somewhere in the neighbourhood of that of human milk, with this difference, that the casein in reduced cow's milk is rather below the normal proportion of human casein. But this is distinctly a gain, seeing its physical peculiarities and resistance to infantile gastric processes.

Let us now consider the position of calcium in milk. Is it in mere solution? Before the process of clotting it may possibly be merely in mechanical solution or may be chemically combined more or less in the aqueous media of milk. Is it in solution after the processes of clotting? Undoubtedly no; it is now at any rate in physiological combination with the tyrein, as witness the entire inability of milk to clot when deprived of its calcium adjuvant. Is this physiological combination of any use? It is. The administration of any amount of calcium phosphate alone and by itself will not produce any appreciable increase of the salt in the urine of a case which is already passing phosphates. The reason for this is that lime salts are of extremely low diffusible index, very little passes out of the intestine into the blood, and nearly all departs per rectum, as instanced the painfully slow recovery of a case of rickets when placed on lime water or simple chemical calcium phosphate. Quantity, administered according to Ringer, bears no relation to the amount absorbed, as a very little suffices as well as a great deal. Beneké found that the phosphate of lime was most useful in those diseases in which it appears most in the urine, as in chronic wasting, scrofula, tuberculosis, &c. It is found in great abundance in the urine of patients suffering from rickets. The calcium salt is only soluble in the acid fluids of the intercellular tissues. It probably finds its way from these tissues back into the blood in order to keep up the supply of "floating phosphate." Hence the tissue depletion. Consequently, unless phosphates are given the drag is on the morphotic phosphate. There is also a possible constant drag under normal conditions, for Chossat succeeded in producing softening of the bones and wasting in animals fed on food deprived of all lime salts. Seeing all this, and that by far the vast number of cases which cannot digest cow's milk are already wasting or are in the condition of rickets, the proposal to exhibit a merely chemical citrate of calcium in indifferent solution in the gastric juice appears, according to the medley of information gleaned from personal observation and from the work of others, to be, at any rate, enterprising and progressive—perhaps towards the ultimate adoption of the more complete decalcification of the infant itself. Again, seeing that physiological calcium phosphate is more easily absorbed than mere chemical calcium phosphate, and that casein has the power to take it into physiological combination, so far from throwing that already in combination out, it might be highly desirable to avail ourselves of this fact to augment the amount present normally in cases where desirable by its addition before and then clotting the casein in order to throw it into physiological contact, and thus convey a larger proportion of the salt to the blood-stream and by this method check the depletion of the tissue phosphate. Further, does clotting of milk serve no useful purpose? According to Dr. Wright too great a quantity of peptone finding its way into the blood conduces to the lowering of the coagulability and tends to the occurrence of "serous hæmorrhage" into

[1] THE LANCET, Oct. 17th, 1896, p. 1113.

the bowel and diarrhœa. It here seems that the clotting retards the too speedy production of peptone in bulk and thus assists in the support of the "coagulability theory," so that decalcification of milk would tend to produce "serous hæmorrhage" and defeat its own ends—that is, if the "serous hæmorrhage" theory of diarrhœa in infants is the only probable, possible, or likely factor. That matter is foreign to the object of this communication. Seeing, therefore, from the few and necessarily briefly discussed points, that there does exist a case against the proposed decalcification of milk, it would be of inestimable service to the general practitioner and others such as myself, who live in an atmosphere of outer misgiving, if those who have actual experience and deeper knowledge of these matters will kindly, if possible, demolish these few objections and clear the horizon to a more settled mode of procedure. Methods of predigestion and alteration of curd by enzymes such as diastase of malt in order to make it more easily assimilated, and an endeavour to assist and not deprive an infant of its "physiological" calcium phosphate, appear to commend themselves rather than a well-intentioned and unwitting decalcification of milk and infant too. Finally, it is an undoubted fact that calcium exerts a far more powerful trophic action on protoplasmic tissue otherwise than mere bone formation and pathological degeneration, as instanced its value in some conditions of blood destruction, tropical anæmia, strumous degenerations generally, glandular instability, &c. Calcareous degeneration of vessels and tissue points apparently to defective tissue processes and deficient maintenance of physiological combination *in situ* than to mere chemical combination *per se*, as that of the silting up of sand at the mouth of a river. Calcium perhaps plays an analogous part to the morphotic tissues that iron does to the oxygen-carrying power of red blood corpuscles. Defects of nutrition or perhaps deficiency, causing rickets, and mal-metabolism, causing gout; one condition leading to loss and the other to precipitation *in situ*. It now remains to hear a few words for the "defence" of decalcification of milk, so I conclude with every assurance of the mere desire to kindly and courteously criticise and discuss, and remain,

Sirs, yours faithfully,

F. W. FORBES ROSS, M.D. Edin.

Chepstow-place, W., Nov. 2nd, 1896.

"POISONOUS HONEY."

To the Editors of THE LANCET.

SIRS,—A few years ago I was poisoned by honey, and as the symptoms, though pretty severe, differed from those of your contributors it may interest your readers to have a brief history of my case. On Nov. 2nd, 1891, some honey which had been brought from the Isle of Wight two months previously was put on the breakfast table, and I ate a fair quantity of the honey that had fallen from the comb. I was at the time in perfect health, and with the exception of the honey my diet was precisely similar to what it had been for weeks. During the day I noticed that my thighs felt unusually warm and they were abnormally sensitive to touch. On undressing at night I observed that both thighs were covered with a bright-red smooth rash. Next morning I found that the rash had extended round the back and over the nates. Wherever the rash was there was considerable swelling, which pitted on pressure. Not suspecting the cause I again ate the honey at breakfast. During the day the heat of the thighs increased, they were more swollen, and wherever the erythema was there was itching and pricking as from fine needles. The swelling and sensitiveness were much increased. I now suspected the honey as the cause of these symptoms, so did not eat any more. I found on inquiry that a large number of dead bees were taken from the honey that had escaped from the comb just before it was put on the table. The virus contained in the poison bags of these insects had evidently by exposure become mingled with the honey, and I was suffering from the pathogenic effects of bee-poison. I did nothing to interfere with the action of the poison and let the disease run its course. During the next six days the erythema, accompanied by œdema, continued to spread. On the third day there appeared bright red patches the size of my hand at the back of the upper arms and towards the scapulæ. The œdema of the thighs and legs increased greatly and it became uncomfortable to bend the knees on account of the swelling of the hams. The fourth day I felt some darting pains in the cardiac region and burning in the throat. On the afternoon of the fifth day I had a sudden attack of diarrhœa of liquid brown fæces and mucus attended by tenesmus. After this the erythema and œdema gradually declined. The heat of the thighs gave place to horripilations over them, and intense itching of the discoloured cutaneous surface set in. The duration of the attack was about ten days, but even after three weeks the skin still remained discoloured where the erythema had been. I may mention that the eruption was absolutely symmetrical on both the lower and upper parts. The urine, with the exception of an occasional excess of urates, was normal during the whole period. My health in other respects continued good all the time. I made no alteration in my habits, walked about as much as usual, though the weight of my legs and the hide-bound feeling of the skin made walking not very pleasant. My appetite continued good and I took every morning a cold bath.

I am, Sirs, yours faithfully,

Montagu-square, Nov. 2nd. R. E. DUDGEON.

"THE LOSS OF LIFE FROM PREVENTABLE DISEASE."

To the Editors of THE LANCET.

SIRS,—Since my last letter in THE LANCET on the loss of life from whooping-cough, the most fatal of all the zymotic diseases of childhood under the age of five years, a matter which all those interested in the progress of sanitary science deplore, my attention has again been directed to the subject. Some are in favour of notification and isolation, others recommending the education of parents as to the highly infectious and preventable nature of the malady by handbills and a system of house-to-house visitation by female inspectors. I am anxious to know from those of your readers who have given the latter method a trial what the result has been. With regard to allowing those suffering from the disease in a well-marked form to play in the streets of towns with healthy children and travel in public conveyances of various kinds there are few who would not condemn the practice, and it appears strange that our railway companies, especially so when they have a by-law in reference to the same, should take no action in the matter. We are forced to the conclusion that the school operations play an important part in the spread of the disease, and the question naturally arises to what extent this would be counteracted by a system of medical school inspection. I incline to the opinion that after recovery from pertussis disinfection is often neglected, and that one of the advantages obtained from notification, apart from isolation, would be the resulting proper and efficient disinfection. In many parishes blankets are given out to the poor for use during the winter months, which are washed and returned, but not, as a rule, disinfected.—I am, Sirs, yours truly,

St. Leonards, Nov. 6th, 1896. SAMUEL LEE, M.D. St. And.

THE WATER-SUPPLY OF MADEIRA.

To the Editors of THE LANCET.

SIRS,—Letters commenting very adversely on the sanitary condition of Funchal, and especially as to its water-supply, having appeared in various English papers lately, we, the only resident and practising British medical men now here, consider it most desirable that the real state of the island should be published in detail. As regards the water-supply it has been stated that there is no drinking water in the town of Funchal except that conveyed in open and visibly polluted gutters to the drinking fountains of the town. Now this is not true. There is water conveyed to the town in open gutters or levadas, but this is solely for irrigation purposes and for flushing the drains; and although the poor inhabitants, too lazy or too ignorant to go further afield, constantly use this water for all domestic purposes with apparent impunity it has never been a source of drinking water supplied to visitors. The water for the principal drinking founts is conveyed from the mountains in iron pipes, not in open channels, and the sources are protected by buildings with locked doors and every precaution is taken to prevent contamination. There are founts of known good water and also some from suspected sources, but these are well known to every one and great discrimination is used. Also some of these founts have recently been connected with

new springs and others are in progress of being so supplied. For many years past Madeira has been very free from zymotic disease, but after an unprecedented rainfall of between two and three times the average annual amount, and extending from September, 1894, to September, 1895, with only two summer months without rain, typhoid fever appeared in the season 1895 to 1896. The water from the João Diniz spring, from which the drinking water for all visitors and foreign residents was always drawn, has until last season been known to be good water both by analyses and long experience, and was consequently the last suspected. It was discovered last spring that this water had become fouled by leakage from a neighbouring drain. This unfortunate circumstance was sufficient to account for such illness as occurred here last season, which amounted to twenty-four of the visitors and residents being attacked with typhoid fever out of a total stated in the last consular report to be 2350 exclusive of foreign residents, and there were four fatal cases, only one of these being in presumably good health beforehand. The drrinage defect referred to has since been remedied temporarily, and the civil governor has stated this week that funds have come from Lisbon to thoroughly re-model the palace and other neighbouring drains.

In making these statements we do not in any wise wish to represent the water-supply of Madeira as being other than primitive and unsystematic or to do anything which could lead the authorities to consider the present arrangements at all adequate and not capable of great improvement. Meanwhile they have admitted the fact, and the town council have advertised for tenders for a complete water-supply to the town; also, the authorities at Lisbon have been petitioned to take off the duty on filters. All the hotels are now supplied with water filtered through Pasteur-Chamberland filters, and most of them make their own soda-water from the same supply. All these reforms are subsequent to the outbreak last season. Pure ice from an English manufactory is abundantly available at a reasonable rate. The abattoirs are on a model that many English towns might copy to their advantage. The markets are excellent. The two largest dairies are managed with scrupulous care and cleanliness. In a matter of so much importance it is as useless as it is easy to publish Utopian schemes; but something more tangible and reassuring, both to medical minds and to the public, is required, and this, we trust, may be effected by our plain statement of facts as to the improved sanitary conditions here.

With an incomparable climate like that of Madeira, where a variation of 10° F. shade temperature in the twenty-four hours is more than the average, and the extremes of summer shade and winter night temperature most rarely exceed 25° F., with an excellent and pure food-supply, added to the fact that pure water *is* obtainable in all hotels and private houses, the conclusion arrived at cannot be other than that, so far from there being any danger to be apprehended from a residence in Madeira, the conditions of life here compare most favourably with those of the majority of known health resorts.

We are, Sirs, yours faithfully,
B. ROWLEY CONOLLY, M.R.C.S. Eng.,
FREDERICK J. HICKS, M.A., M.B. Oxon., &c.
RONALD E. S. KROHN, M.D. Lond., &c.

Funchal, Madeira, Nov. 2nd, 1896.

THE committee of the Crickhowell Dispensary at their annual meeting held on the 31st ult. unanimously resolved to increase the salary of the medical officer, Mr. Philip E. Hill, M.R.C.S. Eng., from £25 to £35 per annum.

BEDFORD MEDICAL SOCIETY.—A meeting of this society was held on Oct. 29th, the President, Dr. G. P. Goldsmith, being in the chair. Dr. Willmer Phillips read the notes of a case of Persistent Cough cured by the aspiration of a small quantity of pus from the chest. Dr. Willmer Phillips and Mr. Gifford Nash read notes of a case of Gangrene of the Lung treated by incision and drainage, which ended in recovery. Mr. Colby Sharpin read notes of a case of Ovariotomy for a Large Papillomatous Cyst, which was followed by the birth of a healthy child a year later. Mr. Kinsey showed a young man who was thrown from a bicycle on to a stake which entered the abdominal cavity. The gut which protruded was returned and the wound sutured, the patient recovering without a bad symptom. Dr. Rowland Coombs showed two Uterine Polypi and the Uterus and Appendages from a case of Carcinoma of the Body of the Uterus.

HOSPITAL ABUSE.

(BY OUR SPECIAL COMMISSIONER.)

IV.—LIVERPOOL.[1]

IT is freely acknowledged in Liverpool that medical men are now taking a greater interest in the question of hospital abuse than they did a few years back. On the other hand, my investigations so far tend to show that most of the hospital honorary physicians and surgeons do not think the grievance is very widespread. In any case the complaint, such as it is, is raised against the special rather than against the general hospitals. The parent hospital was erected in 1749 and was situated on the site now occupied by St. George's Hall. Public dispensaries were established after the hospital to meet a want which undoubtedly existed. The Liverpool Royal Infirmary was designed for in-patients. As out-patients there were only cases of accidents and some of the old in-patients who occasionally returned for advice. Thus it was only natural that, apart from the hospital, there should be public charities called dispensaries for out-patients. These two systems were worked separately till within recent years. Now, however, the hospitals are gradually increasing their out-patients' departments; but the dispensaries still remain great institutions, and the number of their patients increases in spite of the action of the hospitals. There was no special sickness last year. The last annual report of the dispensaries states that the number of cases of infectious disease notified was 528, which was about 300 less than the previous year; yet at the North, South, and East Dispensaries the total amount of patients seen was 56,742 in 1894 and 63,446 in 1895, thus showing an increase of 6704 for 1895, in spite of the fact that the medical officer of health reports more favourably on the health of the town during the latter of these two years. The same may be said of the patients treated at their own homes by the dispensary medical officers; these amounted for the three dispensaries to a total of 8288 in 1894 and to 9468 in 1896, an increase of 1180 patients. The total number of consultations given to all classes of patients by the public dispensary medical officers was 160,370 in 1894 and 175,283 in 1895, which is an increase of 14,913, and represents for the latter year a daily average of 571 consultations. The question naturally arises whether out of this enormous number of patients there is not a considerable proportion who could well afford to pay for the advice of a private practitioner. The president of the managing committee, Mr. Meade-King, assures me that this is not so. If there is a grievance, he said, it is of the very opposite character. Medical relief is refused where, in the opinion of at least some people, it ought to be given. Patients who are in the receipt of outdoor Poor-law relief are referred back to the parish medical officer. It is argued that because a very poor person receives 2*s.* 6*d.* a week from the parish or some loaves of bread that is no sufficient reason why such a person should not come to the dispensary. The treasurer, Mr. F. Bowden, related to me that some eight years ago members of the managing committee paid a surprise visit to the three dispensaries and made inquiries with regard to the patients who were then present. It became quite evident that there was no abuse at that moment. The addresses the patients gave, the houses and the streets in which they lived, sufficed to convince the committee of their extreme poverty. Also, the rule for the admission of patients states that "the only recognised patients of this institution are the sick poor who are unable to command the services of a regular practitioner, excepting in cases of accidents or other emergency, when relief in the first instance will be afforded to all who may require it. In no instance shall any case of midwifery be attended from the institution;" and, further, the rules state: "It is hoped that every subscriber will satisfy himself that the object of his recommendation is unable to pay for medicines as well as advice." It is acknowledged that occasionally it has been found that workmen earning as much as 27*s.* a week have come to the dispensary for advice. Such patients are

[1] The previous articles on this subject were published in THE LANCET on the following dates: (1) Sept. 26th, 1896, Plymouth and Devonport; (2) Oct. 10th, 1896, Exeter; (2 *continued*) Oct. 17th, 1896, Exeter; (3) Oct. 31st, 1896, St. Thomas's Hospital, London.

refused advice unless it be proved that they have large families. The margin of absolute poverty is thus sometimes overstepped, but really wealthy people do not go to the dispensaries.

Formerly it was necessary to obtain a subscriber's recommendation before applying to the dispensaries. This occasioned some slight abuse. It is even said that some recommendations were sold. Of course, they were not sold by the subscribers, as a person who could subscribe a guinea to such an institution would not need to sell a ticket. But some persons were supposed to have got hold of tickets under some false pretext, and, not requiring them, to have sold the tickets to those who did. Again, it often happened that poor people who were really in need of medical advice could not get tickets or lost so much time in procuring these tickets that their illness was seriously aggravated for want of medical advice and medicine. When this ticket system was in force there was an inspector who was paid a salary to see that no abuse was committed. This system, however, did not succeed, and the committee dispensed with the services of the inspector and has practically abolished the ticket system. Patients may now make out their own tickets, and doubtless this system is not more open to abuse than the other, but there should be something on the ticket to remind the applicant that the poor alone are admitted. In fact, there is no reason why the applicants should not be made to state what is their occupation and income. Apart from the prevention of abuse the collection of such sort of information might be of considerable use for the drawing up of statistics relating to social problems and with regard to the special prevalence of certain diseases in particular occupations. As it is, the detection of abuse is left entirely to the medical man. There is a head surgeon and two assistant surgeons at each of the three dispensaries. We have seen that in 1895 they gave an average of 571 consultations daily, or that there was this number of daily attendances at the dispensaries. More than a third of these attendants were new patients. Can nine medical men examine about 200 new patients per day and ascertain not only what is the nature of their complaints, but what is the amount of their income? Then, of course, these figures represent averages. The actual number of patients to be seen must on some days be much greater than the average, and this, of course, leaves less time to examine and question each individual. Besides, as I have already remarked on a previous occasion, it is not a medical man's business nor is he qualified to act the part of a detective and ascertain whether frauds are committed.

With respect to the Liverpool hospitals a sharp line must be drawn between the general and the special hospitals. The former are the outcome of a real public necessity. The latter are too often founded by individual medical men. Sometimes a medical man cannot gain admission into the general hospital, he therefore persuades a certain number of persons that a special hospital is very much needed. It naturally follows that, in any case at first, any class of patient is welcome. If the applicant for relief has considerable private means there is always the chance that he may be converted into a private patient or be persuaded to subscribe something towards the new and struggling institution. Other special hospitals owe their existence simply to the spirit of individual vanity. Medical men have been known to devote much time and a large portion of their private fortunes to the end that they might call themselves hospital surgeons or physicians. In time, however, special hospitals which had a singular origin have become quite respectable and to-day nothing can be said against them. It must also be acknowledged that if in Liverpool there are a great many special hospitals, this is in a large measure due to the policy which till recently prevailed in the management of the Royal Infirmary. For many years no special departments were formed. The Leeds and other infirmaries have surrounded themselves with special departments, so that at Leeds and in many other towns there was no pretext for opening special hospitals. Even to-day, though there are now at the Royal Infirmary special departments for skin disease, for diseases of the eye and ear, and for the throat, these are not established for charitable purposes, but are merely cliniques that take in only a small number of patients, just sufficient for teaching purposes. The greater number of the patients have even now to go to the special hospitals devoted to these particular branches of medical work.

The general hospitals at Liverpool are situated for the most part along the line of the docks, which it is known extend for a distance of six miles. It is in the docks that the great majority of accidents occur. The surgeons are mainly occupied in dealing with accidental injuries. On the medical side the physicians are largely, if not entirely, engaged in treating sailors who arrive in port ill. These are the Southern Hospital, the Northern Hospital, the Stanley and the Bootle Hospitals. If there is any abuse at these four hospitals it must, I was assured, be exceptional. The patients for the most part are dock labourers, sailors, and workers attached to the port of Liverpool. The misery prevailing along the line of the docks is very intense. We may often see 20,000 men waiting for employment round and about the dock gates when there is barely work enough for 5000 or 6000 labourers. Even those who have something like regular employment can never be said to possess more than about 5*s*. On a Saturday by the time they have paid their debts and enjoyed their weekly bout of drink it is scarcely likely that they will possess more than 5*s*. for the remaining six days of the week. There are no medical fees to be obtained out of such a population.

The Royal Infirmary is differently situated. It stands on an elevation in the centre of the town and well away from the docks. The practice here is of a general character, and there is a fair sprinkling of patients from North Wales, the Isle of Man, and the county generally. The patients are of a much more respectable class. No doubt some patients slip in who could pay, but I have not yet heard that such abuse exists on a large scale. It is, on the contrary, a fact that the most respectable and apparently well-to-do patients are almost invariably sent in by medical men. This is easily explained. Such persons belong to a class who can pay small fees during a short illness, but who cannot pay for long illnesses or serious operations. Thus there is in Liverpool a very numerous class of clerks and the lower grades of officers on board steamships. A steamship company may perhaps employ a thousand persons, and out of this total there are, say, not twenty who receive a sufficiently high income to pay a forty-guinea or fifty-guinea fee for a serious operation. On the other hand, there are any number of clerks, second and third engineers and mates, boatswains and others who constitute a respectable and numerous section of the population. They live in very comfortable little cottages, which they rent for £15 or £18 a year. They have to wear good clothes, and by the time they have a wife and some children they but seldom possess more than £5 or so in hand. If one of the children has scarlet fever or measles they send for the local practitioner and nurse the child at home; but if a leg is broken or if a tumour has to be removed then such families have not the means to face the necessarily expensive treatment, and their usual medical adviser gives them a recommendation for the Royal Infirmary. The patients who come from the provinces are also bearers of medical recommendations. There is, I was assured, very little real abuse. On the other hand, it was acknowledged that there is no special means organised for detecting such abuse. The Liverpool secretary of the Charity Organisation Society was also of opinion that there was but little or no abuse at the general hospitals. Rich people do not like to face the students at the general hospitals and to sit for hours with a crowd of very poor people. The whole thing is too public.

The same cannot be said, however, with regard to the special hospitals. These are smaller hospitals and more private in character. There is distinctly an attempt made by the public to take advantage of the out-patient departments at the special hospitals and perhaps also of the women's wards at the general hospitals. On this latter phase of the question I hope ultimately to obtain more precise information, and I shall also have a good deal to say concerning the special hospitals.

(To be continued.)

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The David Lewis Trust and St. Mary's Hospital.

A LEADING ARTICLE in the *Manchester Guardian* of Friday last says, with respect to the sum of £70,000 offered by the trustees, that it "was already all but lost through the failure of the board of St. Mary's Hospital to come to terms with

the David Lewis trustees," but "it is still, we believe, just possible to avert this misfortune." What is possible ought to be done, for it would be a monumental and almost criminal piece of wrong-headedness to deprive the poor women and children of the district of the boon held out to them. In a memorandum dated June 18th last the trustees inform the Joint Committee of St. Mary's and the Southern Hospital that they had arrived at the following final conclusions: "(1) That the capital must be expended in building one hospital, in which shall be provided accommodation of the best character, on a suitable site, where good air, ample space, and freedom from noise may be assured; (2) to work with this there must be in the centre of the town a well-equipped building suitable for consultation and the treatment of out-door patients, also emergency cases, for which a few beds may be provided, and dispensary purposes, having also accommodation for nurses, who would attend women at their homes, and for the necessary medical staff." This scheme they held would best utilise the resources of the two hospitals, for (1) the land at Stanley-grove in possession of the Southern Hospital satisfied the conditions as to space, good air, and freedom from noise; (2) the land and possibly part of the buildings of St. Mary's Hospital, with the expenditure of not more than £10,000, will fulfil the second set of requirements; and (3) to provide for future maintenance the trustees consider that the whole of the assets of the two hospitals "might be realised and vested in an endowment fund for the new hospital." Each hospital would have to give up something. St. Mary's Hospital would have to accept the Stanley-grove site and to sell the Gloucester-street site. This site, happily not as yet built on, was acquired a few years ago for a new maternity hospital for St. Mary's Hospital. What influenced the committee in its selection it would be difficult to say. It is at the corner of Oxford-street and Gloucester-street, nearly at the lowest point of the former; it is close to the Oxford-road station; the traffic along both streets is enormous, and its proximity to the station further ensures perpetual noise of the most irritating character. In dry weather an abundant and never-failing supply of dust is provided, and in winter if fog is to be found in Manchester it is at the site chosen by the authorities of St. Mary's Hospital. It is desirable, therefore, to "realise" this property, so that a maternity hospital shall not be, from external causes, a place of torment. The name of the Southern Hospital would be dropped, as to which its committee agree. Then comes one of the great difficulties. The name St. Mary's Hospital is to be retained, but coupled as follows: "The David Lewis St. Mary's Hospital." This is not a euphonious blend, but whether any other can be devised acceptable to both sticklers for a name or not in the course of time "St. Mary's" would probably come to be used in common parlance. £60,000 were to be spent on the new hospital of 200 beds and the medical staffs were to be amalgamated. On Sept. 8th the chairman of St. Mary's Hospital wrote to the trustees objecting to lose or change the name of the hospital, saying they were not prepared to adopt the name "David Lewis St. Mary's Hospital," and objecting also to the Stanley-grove site. The board of St. Mary's Hospital came to the conclusion that the acceptance of the conditions imposed by the David Lewis Trust would be "the annihilation of the old and valued hospital of St. Mary" by the transfer of its funds for the establishment of a hospital so closely connected with the Owens College as to become in a brief period of time "an integral and indissoluble part of that institution," and the board did not see how this would benefit St. Mary's Hospital. The Southern Hospital is a comparatively young institution, originated by the efforts of the late Dr. Thorburn and Dr. Henry Simpson, so that the loss of its title does not seem so grievous as does that of the older institution. But though the name of so large a benefactor should be preserved it ought not to dominate the others so completely. If the offer is withdrawn the two hospitals will still exist, and if accepted and the new one built there might, as suggested by a writer in one of the papers, be a David Lewis wing, which would perpetuate the name. The objection to the site in Stanley-grove as too distant from the poorer parts of the town is trivial, as the hospital will be for in-patients only. The last objection is the real obstacle to the success of the scheme. The Stanley-grove site was conveyed to the Owens College by the Whitworth trustees, and then granted by the former to the Southern Hospital for a fixed chief rent, and conditionally on the retention by the College of certain rights of participation in the educational work done in the wards. Mr. Montgomery, the hon. treasurer of the Southern Hospital, says in a letter to the *Guardian*: "It is true that Owens College asks that thirty beds in the new hospital out of 150 or 200 shall be placed in charge of two of the professors. It is also true that one seat, but one seat only, on the board of management was assigned to her." The truth is that the college, having its medical department, is naturally wishful to have a hospital of its own. At present clinical work has to be done chiefly at the Royal Infirmary and in varying degrees at the other hospitals. If funds were forthcoming a completely equipped hospital would very soon be provided. But the funds are wanting, so that the College has to be content with driving a hard bargain where it can with other institutions. It is said that it "would not have the right to appoint a single governor or to influence a single detail of administration." Everyone knows, however, that if so minded it would not be difficult to arrange these matters so that the influence of the College would be predominant, though the machinery was not obtrusive, and it is this apparently that the authorities of St. Mary's Hospital foresee and dislike. How the matter will be settled is not yet apparent, but it cannot be supposed that £70,000 once offered for hospital purposes will be lost, even though St. Mary's Hospital declines to inflict on itself what many of its well-wishers believe would be its "happy dispatch." It has already got £20,000 towards a building fund on its own account, and it would be a grievous error if the "David Lewis" scheme should be wrecked for this and for any additional money to be sunk in the Gloucester-street site.

Municipal Dwellings.

Since my last communication the Council has rejected a report from the Sanitary Committee and adopted an amendment which will lead to considerable changes in the original scheme. The recommendation of the committee was to build three lodging-houses, two for men, and one for women. But after hearing the views of a deputation representing the localities it was decided to put up tenement dwellings in Oldham-road and in Hulme, and to use the Pott-street site in Ancoats for a lodging-house for men. The amendment, which was carried, was to the effect that tenement dwellings should be erected in Pott-street also, doing away altogether with the lodging-house scheme. The Improvement Committee is also responsible for clearing away houses; for example, they have removed twenty-nine lodging-houses, and it seems reasonable that some provision should be made for those dispossessed. The Improvement Committee are about to build cottages at Newton Heath—which is no heath, but a densely populated suburb—some of them of four rooms only, as there are many who cannot pay more than 4*s.* 6*d.* a week, for which sum they may be let. There is a strong and very proper feeling in the council, however, that each house should have three bedrooms, and thirty of them are to give this accommodation. The difficulty is to bring the cost of building within the means of the tenants without loss to the corporation.

Nov. 10th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University Rectorial Election.

THE triennial election of a Lord Rector for Edinburgh University took place on Saturday. Lord Balfour of Burleigh, Secretary for Scotland, and Mr. R. B. Haldane, Q.C., M.P., were the rival candidates. The result of the poll showed that out of a total poll of 1761 Lord Balfour of Burleigh had a majority of 219. The quadrangle of the old buildings presented the same lively appearance during the polling which it has usually done, and packets of ochre and similar unpleasant substances are still the favourite missiles on these occasions. In the evening a torchlight procession was held in which about 1000 students took part. The contest was conducted on purely political lines, as it almost invariably is. A distinguished and patriotic Scot like Lord Balfour of Burleigh will, as Lord Rector, be a power in the councils of the university.

Appointment of Medical Electricians to Edinburgh Royal Infirmary.

It was decided some time ago to appoint medical electricians to the Edinburgh Royal Infirmary, and, in fact, to

add an electrical department to the existing arrangements. The Medical Managers Committee were instructed to report on the proposal, and at the last meeting of the managers their report came up and was accepted. The detailed reasoning of the report need not be given here. The gist of it was that the committee had approached Dr. Milne Murray, who, amongst his other attainments, is an expert and accomplished electrician, and he consented to be nominated for the post with a view to have it properly equipped and established and put in working order. To help him and to relieve him of some of the work Dr. Dawson Turner was also appointed. This should make the department a strong and valuable one. It is specially worthy of note that the arrangements in this case were left by the managers to the medical members of the board, and the arrangements proposed by the latter were accepted by the general board. This is a step reflecting credit alike upon the committee and the managers and is worthy of imitation.

Edinburgh Medico-Chirurgical Society.

This society held its first meeting for the session 1896–7 on Wednesday of last week. There was an unusually large attendance of members. The hall had also been done up and the arrangement of the benches was changed, the result being that there was an air of comfort which the meetings of the society have often been lacking in. Various changes were made in the office-bearers. Dr. Cadell was appointed a vice-president, in succession to Dr. Wyllie; Mr. Cotterill was appointed joint secretary with Dr. Graham Brown, on the retirement of Mr. Hodsdon from the post of senior secretary; Dr. McKenzie Johnston was re-appointed treasurer; Dr. Craig editor of the Transactions; while Dr. Joseph Bell, Mr. Hodsdon, Dr. Milne Murray, and Dr. Noël Paton were elected members of the council.

The New Research Laboratory of the Royal College of Physicians of Edinburgh.

This laboratory in its new premises was formally opened on Friday of last week by the President of the College, in the presence of a representative and influential gathering of members of the profession and of leading citizens.

Prizes of the Edinburgh Royal Colleges.

A prize of thirty-five guineas offered by the Royal College of Surgeons of Edinburgh for an essay upon a surgical subject has been awarded to Dr. Alexander Miles, F.R.C.S. Edin., for his essay on the Eye Symptoms Associated with Injuries to the Head. The Royal College of Physicians of Edinburgh has awarded the Dr. Alexander Wood bursary of £60 to Mr. G. Cecil Strathairn for excellence in subjects of the preliminary examination.

Glasgow Public Health Committee.

The committee has issued for general distribution a leaflet of practical directions on the prevention of phthisis. Directions are given of the course that ought to be followed in a household when one of the members unfortunately suffers from phthisis and the necessity for these is explained. The directions are essentially practical and deal with the question of the sputa in a very precise and detailed fashion. The committee also indicate their willingness to present to medical men a copy of Dr. J. B. Russell's recent report on the prevention of tuberculosis. A synopsis of the report has also been prepared for the use of nurses, visitors, teachers, and others, and this also the committee desire to distribute gratis. It states in popular terms the current doctrine as to the contagiousness of tuberculosis and the practical issues arising from this. The Public Health Department has decided to appoint a special veterinary surgeon to the Corporation. He is to be able to conduct microscopic and bacteriological investigations and is to devote his whole time to the duties of his office. The salary is fixed at £250 per annum.

Post-graduate Teaching in Glasgow.

The class of bacteriology conducted by Professor Joseph Coats in the new Pathological Institute at the Western Infirmary is at present attended by twenty-two practitioners. This is considered very satisfactory, especially as the time of the year is not very suitable for men in private practice and the younger men in the schools are busy with the work of the session. A hope is freely expressed that the class will be repeated in April. A successful post-graduate class in bacteriology is also being conducted at the Royal Infirmary by Mr. David McCrorie, L.R.C.P. Edin., assistant pathologist. The directors of the Glasgow Hospital for Diseases of Women have decided to encourage post-graduate study in the hospital, and systematic instruction is now given by different members of the staff. The school of gynæcology, in connexion with the new Samaritan Hospital, was inaugurated on the 4th inst., when Mr. Stuart Nairne, F.R.C.S. Edin., delivered an address on "The Limits of Gynæcology." The "limits" are, however, somewhat difficult to find in Mr. Nairne's address, for he claims for gynæcology the complete medical and surgical treatment of women from the cradle to the grave.

Glasgow University.

At a graduation ceremony on the 5th inst. the degree of M.D. was conferred upon twelve gentlemen. Of these, Mr. Robt. Kennedy, M.A., B.Sc., M.B., C.M., was awarded "honours," his thesis being "Studies on the Regeneration of Nerves." Mr. Thos. Speirs Kirkland, M.B., C.M., received "commendation" for his thesis on "Quinine Amaurosis." Fifteen gentlemen were capped M.B. and C.M., and a number of degrees in arts and science were also conferred. Principal Caird presided and received a hearty welcome from the students.

Glasgow Philosophical Society.

The newly-elected president, Dr. Ebenezer Duncan, physician to the Victoria Infirmary, delivered his inaugural address on the 5th inst. The subject of the address was—"The Scottish Races; their Ethnology, Growth, and Distribution."

Medical Town Councillors in Glasgow.

In the recent municipal elections a number of medical men appeared as candidates and three of them have secured election. Mr. J. Garey, M.R.C.S. Eng., heads the poll in the Govanhill ward; Mr. Wm. Dougan, M.D. Glasg., is placed in the same proud position by the electors in the Springburn ward; and in the Cowcaddens ward Mr. J. Carswell, L.R.C.P. Edin., has been elected. In the Woodside ward Mr. A. R. Gunn, M.B. Glasg., failed to secure election.

Nov. 10th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Scarlet Fever Epidemic in Dublin.

AT a meeting of the representatives of the sanitary authorities of the city and county of Dublin which was held on the 7th inst. to consider the question of isolation hospitals and convalescent homes, Sir Charles Cameron, the chief medical officer of health, stated that all the hospitals were crowded, the Mater Misericordiæ Hospital was entirely filled, the Hardwicke Hospital had but ten vacancies, the Meath Hospital had two, and Sir Patrick Dun's Hospital was without any. He was of opinion that the boards of guardians, the corporation, and the townships should unite with the object of providing, as soon as possible, a convalescent home, preferably at the situation of the Pigeon-house Fort, which was soon about to become the property of the corporation. Mr. Stafford, the medical officer of the Local Government Board, stated that there were only twelve vacant beds in the city hospitals, while there were at present nearly three hundred cases of scarlet fever in them, and suggested that they should at once enter into communication with the hospitals in order to ascertain what additional beds could be provided in addition to those now in use if they were paid for. It subsequently transpired that the Mater Misericordiæ and Cork-street hospitals were prepared to give 100 additional beds each on those conditions, and it was resolved that the other hospitals should be communicated with. It was finally decided that the conference should request the guardians to establish a convalescent home and that the Government and the military authorities should be pressed to hand over the Pigeon House Fort to the corporation as soon as possible so that it might be utilised for that purpose. A letter has appeared in the daily papers of Nov. 13th from Mr. Antony Roche, Professor of Hygiene, objecting to the situation proposed for the convalescent hospital on the grounds that the Pigeon House Fort is placed on a low-lying slope at the southern opening of the mouth of the river, where patients would be exposed to all the depressing influences of a cold and damp climate during the wintry months. Such is the condition of things at this date, but an adjourned meeting of the Sanitary Conference is to be held at an early date.

Mater Misericordiæ Hospital.

The classes at this hospital are more than usually large this session. A good deal of interest is taken just now in

the progress of a rather extraordinary case of tetanus which was admitted there nearly three weeks ago, supposed to be suffering from tonsillitis and in which the antitoxin method of treatment has been given a full trial. A man of twenty presented himself with symptoms of tonsillitis, inflamed soft palate, difficulty of swallowing and of speech, with alarming nocturnal attacks of dyspnœa. His soft palate and tonsils were twice freely scarified for the relief of these symptoms and with good effect. On careful examination by Mr. Coppinger a normal temperature as shown by his chart was noted, and the fact that instead of the usual pains in the neck and about the ears he complained rather of trouble about the dorsal spine and between his shoulders at the back. His face also showed just a trace of the characteristic spasm of muscles at the angles of the mouth. in fact, a hint of the risus sardonicus. There was, however, no obvious Hippocratic smile, while the patient himself was cheerful and made little of his ailment. Very soon, however, opisthotonic spasms were noticed and the case was pronounced to be one of tetanus. The inflammatory condition of the throat quickly disappeared and has now been long absent. The tetanic spasms, on the other hand, increased in severity and frequency for about a week and then began slowly to become less severe and less frequent; they are now infrequent and much less severe, but they still persist. Since note was taken of the first symptoms the patient was treated with the antitoxic serum, at first in one large dose of 50 c.c. and since in doses of 15 c.c. twice daily—of course, hypodermically. He is now convalescent, but slight spasms still occur at night, even during sleep, which latter must often be produced by hypodermic injections of morphia. I find to-day, from the report of the very competent pharmaceutist of the hospital, that this patient has been given by hypodermic injection not less than sixteen ounces of the antitoxic serum, at a cost of about £12. They are still continued, but in smaller doses, and oxygen inhalations have been prescribed.

Ulster Medical Society.

The opening meeting of the Ulster Medical Society for the present session was held in the Museum, Belfast, on Thursday, Nov. 5th, when there was a very crowded attendance. The out-going President (Professor Sinclair, F.R.C.S Eng.,) having thanked the members for the honour they had done him during the past session, introduced his successor, Dr. Symington, Professor of Anatomy in Queen's College, who read a most interesting introductory address on Recent Progress in the Anatomy and Physiology of the Convolutions of the Brain, based mainly on the recent work and observations of Flechsig of Leipsic. Cordial votes of thanks were given to Professor Symington and Professor Sinclair. The annual dinner is to be held on Nov. 26th. From the report of the council presented to the meeting it is evident that the Ulster Medical Society was never in a more prosperous and vigorous condition than at present, and this is largely due to the indefatigable exertions of the honorary secretary, Dr. McKisack.

Saintfield Dispensary.

Mr. F. H. H. Scott, L.R.C.P. & S. Edin., has been elected medical officer of the Saintfield dispensary district of the Lisburn union, Co. Antrim, as successor to the late Dr. Fulton, J.P.

Queen's College, Belfast.

The following are the scholars in medicine for session, 1896-97:—Fifth Year. Medicine and Pathology: George Adams Hicks. Surgery and Midwifery: Robert Wm. Glennan Stewart, and George Casement Reid Harbinson, a prize. Medicine, Fourth Year: Arthur Berry M'Master, and David M'Cay. Medicine, Third Year: William Matthew Hunter and John Wallace Dick Megaw, B.A. Medicine, Second Year: John Elder M'Ilwaine and Archibald George Heron. Medicine, First Year (Literary): Walter Phillips and (Science) William Rodgers, M.A.

The Mater Infirmorum Hospital.

The ladies of the Hospital Coöperating Association and their able workers have raised for the building fund of the Mater Infirmorum Hospital, Belfast, £1021 1*s.* 2*d.*, collected chiefly in pennies.

Proposed Infectious Diseases Hospital in Belfast.

At the meeting of the governors of the Belfast Asylum, held on Nov. 9th, a deputation from the Public Health Committee of the city corporation waited upon the Asylum Board with reference to the proposal to purchase portion of the ground adjoining the Purdysburn Asylum for the purpose of erecting an infectious diseases hospital. The corporation are in favour of taking a portion of this ground. A plan was shown indicating the ground, and thirty to forty acres would be needed, as it was proposed to build the hospital on the pavilion system. It was pointed out to the deputation that it was really with the Board of Control that the corporation would have to deal, but the governors would be willing to facilitate the wishes of the corporation in any way. All that has been done by the corporation so far is to approve of the building of a hospital to contain sixty beds. Whether the corporation will be able to force the erection of this much-needed infectious diseases hospital at the present time is indeed doubtful, as the ratepayers are protesting against increased taxation, and at a meeting to interview retiring members of the corporation, this very point was raised, the chairman protesting against the expenditure involved in the building of an infectious hospital at the present time. Professor Cuming, M.D. R.U.I., the chairman of the asylum governors, on Nov. 9th raised two most important questions in reference to this proposed new infectious hospital: first, would not the Public Health Committee go in for the old asylum with its large grounds? and, secondly, the importance of its being easily accessible. If the hospital for infectious diseases is built at one end of the city as proposed and at least three miles from its centre, it will be a very long distance to take patients, say ill from typhoid fever; and, indeed, on medical grounds such a journey would be greatly to the disadvantage of fever patients.

Resignation of Professor Everett, F.R.S.

I regret to announce that Dr. Everett has resigned the chair of Natural Philosophy in Queen's College, Belfast, which he has held since November, 1867. The appointment, which last year was worth £516, is in the gift of the Crown.

Nov. 10th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Death of Dr. Hanot.

THE medical world of France was shocked the other day by the news conveyed through the medium of the lay press of the decease of the above-named *sommité médical*, and still more shocked to learn that such an ornament to the profession had put a sudden end to his own existence. It certainly is sad to know that a few drops of hydrocyanic acid should have sufficed to arrest for ever energies the exercise of which have done so much to alleviate human suffering. As Dr. Letulle aptly says in the *Presse Médicale*, we lose in Dr. Hanot one the last survivors of that generation of medical encyclopædists now so rarely met with. Endowed with a mind open to all discoveries, this consummate clinician did not hesitate to utilise them to the best advantage. His numerous pupils know how indefatigable he was in search of truth at the bedside of his patients at the Hôpital St. Antoine. The predominant feature of Dr. Hanot's life-work is the profound study he made of the morbid liver. His epoch-making inaugural thesis, written in 1876, entitled "Essai sur une Cirrhose Hypertrophique du Foie avec Ictère," determined the line on which his future labours were to run. In this important contribution to our knowledge of hepatic pathology he showed that in the hypertrophic variety of cirrhosis the sclerotic process is preceded by angiocholitis. During the next twenty years we have been indebted to him for a mass of researches on tuberculosis of the liver, curable cirrhosis, cancer and other neoplasms of the liver, pigmentary acholia, pathology of the bile, acute atrophy, syphilis of the liver, &c. Our regret at the loss of such a man is intensified and our feelings of pity deepened by the knowledge that after weary years of waiting his ambition was to have been crowned a fortnight hence by his appointment to the dignity of full Professor of the Faculty to which his brilliant work contributed such *éclat*.

French Surgical Congress.

Professor Gross of Nancy and Professor le Dentu of Paris have been elected president and vice-president respectively of the next congress. The questions to be discussed are treatment of contusions of the abdomen (reporter,

M. Demons) and treatment of cancer of the rectum (reporter, M. Quénu).

Peritonitis from Ruptured Gall-bladder in a Pregnant Woman; Operation; Recovery.

Dr. Siredey[1] reports a case of a woman aged twenty-six years and three months pregnant in whom the following symptoms, which began three days before admission into hospital with a sharp pain in the right iliac fossa, led to the diagnosis of acute appendicitis—vomiting of a green matter, exquisite abdominal tenderness, tympanites and constipation, no gas even passing. An incision into the right iliac fossa revealed a healthy appendix, but the peritonitis being found to be more marked in the upper part of the abdominal cavity the incision was prolonged upwards, with the result that a stream of pure bile escaped from the neighbourhood of the gall-bladder. This reservoir was, in fact, found ruptured. The ruptured edges were carefully sutured, and after a toilette of the abdominal cavity had been effected the skin incision was stitched. Vomiting ceased on the morrow, cicatrisation was complete in a fortnight, and the woman is now quite well, gestation not having been interrupted. What caused the rupture of the gall-bladder? This problem cannot be solved, seeing that the patient had never suffered from biliary colic or jaundice and that no bacteriological examination of the peritonitic pus was practicable.

The Continental Anglo-American Medical Society.

The annual meeting and dinner of this useful and flourishing society, which includes in its ranks almost all the British and American practitioners established on the Continent of Europe and in Northern Africa, takes place to-day in Paris, when seventeen candidates for membership present themselves. This brings the number of members up to 100. Dr. Barnard of Paris resigns the post held by him for the last three years of honorary secretary and treasurer, and is succeeded by Dr. Bull, also of Paris.

Nov. 10th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever at Assisi.

THE birthplace of Propertius ("Rome's greatest elegiac poet"), of the saintly Francis, and of Metastasio has too many attractions—artistic, historical, and picturesque—to make its sanitary condition a matter of indifference to the travelling world. An explosion of typhoid fever, numbering thirty-four cases, at the Collegio Convitto alone has filled the town and its near neighbour Perugia with alarm and brought down His Excellency the Minister of Public Instruction with a medical expert to inquire into its cause, present stamping out, and future prevention. Already the Prefect of Perugia, within whose competence it lay to give notice of the initial indications of the epidemic, has been severely reprimanded for neglect of duty; and still further inculpation of local authority is expected, as the water-supply, to which the fever is traced, is scandalously impure and defective. A sharp lesson will be taught these Umbrian resorts if the moneyed visitor on whom so much of their livelihood depends gives them a wide berth for a season. The policy of *laissez-faire* is too distinctively Italian, especially in the matter of sanitation and civilised decency, not to require the admonition that affects Italy in her most sensitive part—the pocket. Things have not yet reverted to the familiar precedent when the Neapolitan syndic received the thanks of the municipality for having suppressed returns as to the presence of cholera, and so retained the tourist *clientèle* which otherwise would have been scared away. But the recent conduct of the local authorities at Verona, Bracciano, and Perugia looks perilously near such a relapse to reprehensible custom, and for the good of Italy, as well as of the stranger, ought to be stigmatised with all the publicity that can be given to it.

"L'Uomo Delinquente."

This among our medical or medico-legal publications is the event of the quarter, being the fifth edition of Lombroso's greatest work. The first appeared at Milan in 1876—a little volume of 200 pages. The second, third, and fourth came out at intervals of a few years, steadily increased by the results of new researches and replies to criticisms. The fifth and last, now before me, presents the book in its definitive form—the whole subject threshed out by the light of accumulated observation and discussion and illustrated by an atlas containing 102 plates with figures of every kind—photographs, tattooings, statistical diagrams, and, indeed, every pictorial adjunct that can throw light on the text. It consists of three large octavos, in great part recast or rewritten, the first of which traces back crime to its genesis, beginning with the savage or the barbarian and coming down by atavic stages to "pazzia morale" (moral madness) and the "cattiveria" (naughtiness) which is normal or congenital in children; from this it proceeds to analyse the physical and mental features of the "delinquente nato" or "criminel-né." The second volume describes those patients whom psychiatry calls "moral maniacs" and "epileptics," and who in their essential features, physical and mental, reproduce the type of the "uomo delinquente." Then follows an examination of "epilepsy" in its protean forms as the basis of delinquency, illustrated by studies of "criminali di passione" and "criminali d'occasione" (according as "passion" or "opportunity" determines their crimes); "criminali pazzi" (criminal lunatics) are next discussed and with them other secondary forms of crime. The third volume, substantially a new treatise, goes thoroughly into the social factors of crime and the means of combating them. It constitutes Lombroso's reply to those critics who accuse him of neglecting the external causes of the criminal and who charge him with relieving society of all responsibility by ascribing everything to the moral degeneration of the individual. This is an eminently interesting—even fascinating—portion of the work, full of ingenious ratiocination and striking deductions, as, for instance, where he shows that not only poverty but wealth may become a factor of crime. The most novel and at the same time the most important part of the volume is that devoted to "therapeutics"—a part sure to arouse vehement and far-reaching discussion. It contains (*inter alia*) an elaborate impeachment of the system of repression in actual use and an almost enthusiastic recognition of educational methods proposed and practised by English philanthropists. This is a truly eloquent vindication of medical prophylaxis brought to bear on tender and plastic infancy and vigilantly followed up through boyhood or puberty to adult age or mature manhood. It brings the whole subject a stage further than that reached at the last (the fourth) Congress of Criminal Anthropology, and will lead up to fresh starting-points for the next congress, which will meet in Holland in the closing year of the century. Two facts in connexion with Lombroso and his work are not to be ignored—his sincerity and his industry. He has convinced himself of the truth and of the social value of his positions, and he has formed them by a patience of inductive research which is associated with the Teutonic rather than the Latin type of character. No student of crime, whether drawn to the study on its medical or on its legal aspect, can afford to neglect the "Uomo Delinquente" of the Italian pathologist, and the announcement of this, its recent publication, as practically a fresh, and at the same time a final, exposition of its author's views cannot but be interesting to readers of THE LANCET and the profession.

Oct. 30th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Actinomycosis.

DR. JOSEF JURINKA, assistant to Professor Wölfler of Prague, has described two cases of actinomycosis of the jaw and one case of perityphlitis actinomycotica which he has successfully treated by iodide of potassium. One of the patients whose jaw was affected was in a very serious condition, as the right half of the face from the temple to the jaw was occupied by a hard swelling; the skin was thickened and rugose, bluish in colour, and permeated by a great many fistulous canals, which discharged a purulent fluid containing granules of actinomyces. The administration of iodide of potassium and the opening of the abscesses were followed by diminution of the pain and stiffness of the jaw, after which the secretion decreased and the fistulous canals became closed, but as other abscesses formed subsequently Dr. Jurinka

[1] Société Médicale des Hôpitaux, Oct. 30th, 1896.

proposed to continue the treatment for several months. The first case recovered after two months and the second after six months. The third case began with intestinal symptoms—viz., with signs of inflammation of the pericæcal connective tissue, and an abscess was discovered, on opening which it was seen that the disease extended to the retro-peritoneal cavity, thereby rendering any surgical interference impossible. The patient was given a tablespoonful of a 3 per cent. solution of iodide of potassium three times a day, the suppurating cavity was stuffed with tampons moistened with a 4 per cent. solution of iodide of potassium, and the result was recovery after three months. Dr. Jurinka believes that the iodide of potassium does not kill the fungus of actinomycosis, but only hinders its development; the *rationale* of its action is, however, not yet satisfactorily ascertained.

The Treatment of Eclampsia.

Statistics of the cases of eclampsia which occurred in the Vienna Obstetrical clinic during the period commencing with 1880 and ending with 1895 have just been published by Dr. Schreiber, and show that there were 137 cases of eclampsia among 42,607 women delivered. With regard to treatment, milk diet was given as a prophylactic when albumin was present in the urine during pregnancy, and if this was unsuccessful premature labour was induced. When the symptoms of eclampsia showed themselves hot baths and narcosis were resorted to and delivery was promptly effected; but if the eclampsia preceded parturition premature labour was induced either by the introduction of bougies or by the use of the colpeurynter. Intra-uterine colpeurysis was not employed. Surgical incision of the os uteri was performed only in two instances, in one of which the seizures commenced seven hours before the confinement and recurred five times; the patient was a primipara thirty years of age, and the presentation was frontal. Cæsarean section was performed once, but was unsuccessful in all respects, for the eclampsia increased afterwards, the attempts to restore animation to the child were fruitless, and the mother survived the operation only eighteen hours. Venesection was employed for eight patients, and with good effect, for only one of them died. Dr. Schreiber prefers the conservative treatment of eclampsia as being at least free from the dangers which attend forcible delivery; moreover, it is not to be expected that eclampsia will ever yield to operative measures.

The Use of Hot Water in Surgery.

An interesting article in the current number of the *Zeitschrift für Krankenpflege* directs the attention of surgeons to the advantages derivable from the use of hot water. In the first place it assists sterilisation, and is therefore suitable for cleansing the hands of the surgeon and the region to be operated on. In the next place it relieves the pain of inflammation and ulcers, limits the inflammatory process, and may even avert suppuration. Its use is also indicated in grave injuries of the extremities, in hæmorrhoids, in inflammation of the prostate gland, and the internal reproductive organs of the female. In cases of injury hot water has to some extent an antiseptic effect, as its temperature checks the development of the micro-organisms. In cases of tonsillitis gargles with water at 55° C. (130° F.) may be employed with success, and rectal irrigation with water of the same temperature in acute prostatitis.

Dishonourable Conduct of a Medical Man.

Last week's daily newspapers contained an account of certain proceedings which have resulted in a medical man being convicted of fraud and sentenced to eight days' imprisonment. The delinquent (Dr. M——) had a patient for whom an operation was necessary, and whose wish was that it should be performed by a professor. Dr. M——, however, had recourse to an operator who, although not a professor, was nevertheless a very able and well-known surgeon, and he made a charge of £14 as "the professor's" fee, of which amount he handed only £12 to the operator, at the same time claiming an additional sum as his own fee. The patient, who supposed that he had been operated on by a professor, came to understand what had taken place and communicated with the operator, who laid an information against Dr. M—— before the Medical Chamber. The council of honour met at once and the case was brought before a judge. This action of the Medical Chamber was unsatisfactory to many medical men, who believed that the Medical Chamber itself was competent to deal with the case, and accordingly at the last meeting Dr. Klein put the following questions to the President:—"1. How did the council of honour of the Medical Chamber come to interfere in the case of Dr. M——? 2. Was the information given by a professional colleague? 3. Did this information suggest that a criminal offence had been committed and thereby preclude the Medical Chamber from dealing with the question? 4. Did the president obtain a legal opinion in the case, and if so, what was the opinion that was given? 5. Was it not possible for the council of honour to deal with the matter?" The president, in his reply, said that the complaint against Dr. M—— was made on July 6th, that so far as he himself was concerned he had acted in conformity with the statutes applicable to the Medical Chamber, and that the fraudulent nature of the transaction was so evident that it was unnecessary for him to obtain a legal opinion; finally, he asked the meeting for a vote of confidence, which he accordingly received.

Ligature of the Thoracic Duct.

At the last meeting of the Vienna Medical Society Dr. Biedl exhibited the carcase of a dog whose thoracic duct he had ligatured in the neck. The animal died three days after the operation without having presented any special symptoms, but on post-mortem examination both the thoracic duct and the receptaculum chyli were found to be dilated, and in the abdomen there was a white tumour—the pancreas, the greater part of which was changed into a white mass. Dr. Biedl supposed that there had been engorgement of the lymph with consecutive bursting of the lymph-vessels; but according to Professor Kolisko, who had also seen the case, there was fatty necrosis of the pancreas. Dr. Biedl, moreover, observed that glycosuria occurred when the flow of lymph into the blood is interfered with, and that the above-mentioned fatty necrosis resembled the appearance seen in diabetes.

Nov. 8th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Battle of the Clubs in Budapest.

AMONG the manifold congresses which were lately held in Budapest the Congress of Medical Men held at the close of September was very conspicuous. It dealt with such important matters as the public health of the country and the social standing of the medical profession. It was especially this latter question to which was given chief attention, for it must be asserted that the social standing of the profession has of late got into a very deplorable state. The chief factors in producing evil here are practically the same as in other countries—a want of due regard to ethics and undue competition among the members of the profession. To be better understood I will endeavour to furnish a brief survey of matters as they stand in Budapest. For many years private clubs have been formed with a view to secure the benefits of medical attendance to the lower classes of the public. Every man joining a club has to pay the monthly sum of from 2*s.* 6*d.* to 3*s.* 6*d.*, in return for which he and his family are granted free medical advice and medicine. If the head of the family is disabled a small weekly sum is allowed. Besides he is in case of death buried free of charge and his family receives the sum of £35. Medical clubs worked on this line grew rapidly in number, so much so that I can hardly imagine there is another place in the world blessed with relatively so many institutions of this kind as Budapest. There are nearly 200 medical clubs working in Budapest and not less than 750,000 persons—that is, four-fifths of the whole population—belong to them. Each club has appointed a conspicuously small number of medical men; nay, there are some members of our profession who are engaged to give medical assistance to the members of two clubs of the minor type. The salary of the medical man is as it were a nominal one, ranging from £5 to £25 a year; and yet there is a very large and very degrading competition to obtain these appointments. Two reasons account for this unwholesome competition: first, because such an appointment is very often the only means at hand for a young practitioner to obtain practice; and, secondly, because the members of the clubs are expected to give a small extra fee to the attending practitioner. Of course, such a *pourboire* system can work only evil. If one medical man is to attend on the sick members of a club numbering more

than 2000 persons it must be evident that he can spend but very little time at the bedside of one patient, and his efforts to cure the case cannot be up to the mark. Thus the professedly chief aim of the clubs—viz., to give appropriate attendance to the poor sick—is very often rendered simply illusory. Another serious drawback of the system is that the members of the clubs are allowed to consult the appointed medical men of their district only. Several years ago Dr. M. Schächter, the well-known editor of the Hungarian medical paper, *Gyógyászat*, who is an indefatigable worker in these fields, issued the *parole* that the first step to ameliorate the state of affairs would be to force upon the clubs the "free-choice" system, working on somewhat similar lines as those obtaining in Germany, and to unite all medical aid clubs into one large association. Much money would be thus saved by the considerably lessened costs of administration, which could be fitly turned to increase the very small fees available for medical attendance. The second and perhaps still more important step would be a legal decision that no man having such an income as to enable him to pay his medical attendant should be allowed to join a medical aid club. All these considerations have been brought forward at the recent medical congress, which has appointed a committee to investigate these matters. I trust that something will be done shortly to raise the social standard of the profession in Hungary.

"*Ungarische Medizinische Presse.*"

The above is the title of a new medical weekly founded by Dr. Edmund Tuszkai. The paper is published in Budapest and will in addition to original articles also print in the German language abstracts of papers which appear in the Hungarian medical periodicals, so as to make them accessible to the profession at large. Most of the professors of the University and the leading physicians have promised contributions, and it may be hoped that the new journal will prove a success in the hands of its able editor.

Nov. 3rd.

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

The late Cholera Epidemic.

SINCE the beginning of September cholera has behaved even better than it was expected to do. Practically then extinct in Cairo, Alexandria, and their suburbs, it gradually relinquished its hold of the country districts and had entirely disappeared before the end of October. The following figures show how the enemy has been driven out of all the strongholds, the numbers quoted being the total cases of cholera from all sources:—

	Cairo.	Rest of Egypt.
Sept. 2nd to 5th	105	402
Sept. 16th to 19th	17	117
Oct. 1st to 3rd	1	39
Oct. 24th to 31st	None.	None.

The increased number of cases in Cairo at the beginning of September was due to the filthy habits of the natives, who chose to drink water from two canals which are intended to act as open sewers and afterwards to irrigate land outside Cairo. These two canals came into use at the end of August and the new cases of cholera were confined to inhabitants living on their banks. Directly the canals were closed and disinfected cholera declined as rapidly as it had increased. The Sanitary Department, in spite of the absence of cholera, is by no means relaxing its vigilance. The Nile, now at its maximum height, breadth, and velocity, is still kept uncontaminated at Cairo, and innumerable sanitary precautions are being continued throughout the whole country. The Egyptian Government has had since May 1st to cope with cholera in 703 villages, and to send to each village medical men, orderlies, drugs, hospital and disinfection equipment. The total number of cases of cholera treated has been 21,732, of which 18,132, or 83 per cent., have died. The sanitary officials have been working at high pressure for twelve months. The inspectors are worn out with perpetual discomfort and responsibility and the clerks in Cairo have never had a day of rest during the whole of that time. Egypt's finances may not allow her to make any pecuniary award to overworked officers, but it is to be hoped that her gratitude will not be entirely unspoken. Europe, too, may congratulate herself that this is the first time that she has escaped infection from epidemic cholera in Egypt.

Kasr-el-Aini Hospital.

The statistics of in-patients for the year 1895 consist of the following entries: surgical, 1202; medical, 1283; midwifery, 61; ophthalmic, 761; venereal, 456; and skin patients, 71. The surgical cases included 20 of gunshot wounds, 3 being in women, 4 of abscess of the liver, 116 of lithotrity and lithotomy, 12 of vesico-vaginal fistulæ, and 3 of recto-vaginal fistulæ. The small number of cases of liver abscess can only be explained by the fact that this is a rare disease among the poorest classes, who chiefly frequent the hospital. Moreover, the operation is not one which is avoided by the general practitioner. The medical cases of one of the two sections consisted of 465 men and 142 women and children. There were 31 cases of poisoning, 23 of the patients being admitted drunk; 3 were caused by datura or hyoscyamus, and 3 others by cannabis indica. Though nervous diseases are rare there were 2 cases of alcoholic neuritis, 2 of paralysis agitans, 2 of general paralysis, 3 of disseminated sclerosis, and 1 of bulbar paralysis. There were 135 cases of pellagra, 6 being fatal. All the cases were complicated by ankylostomiasis and often also by bilharzia. In addition there were 36 cases of ankylostoma anæmia and 14 of bilharziosis, besides 26 of the two parasites combined. Lastly, there were 3 cases of typhus fever and 16 of chronic kidney disease.

Cairo, Nov. 1st.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Insurance Against Hypodermic Accidents.

ONE of the most interesting branches of the law is that relating to accident insurance. The reported cases involve curious and extraordinary claims against the insurance companies and queer defences interposed by such corporations. An unusual claim is put forward in a suit of this kind which has recently been before the court. The plaintiff was a physician. In the autumn of 1894 he was driving when he was overcome by extreme exhaustion arising from an injury which he had received more than a year previously. He stopped his horse in the road and proceeded to administer to himself a hypodermic injection of morphine. Just as he inserted the needle into his leg his horse suddenly started and caused him to drive the needle much deeper than he intended. The wound thus produced gave rise to cellulitis. The plaintiff was disabled for a period of twenty-two weeks, and claimed indemnity to the amount of $487.50 from the Inter-State Casualty Company, which had insured him "against bodily injuries sustained through external, violent, and accidental means," for a term of twelve months. The company refused to pay, the physician brought an action, and when the case came on the presiding judge dismissed the complaint, holding that the injury, even if it occurred as the plaintiff alleged, was not sustained through external, violent, and accidental means, within the intent and purview of the policy. The Apellate Court, by a bare majority declared this ruling erroneous, and decided that the jury should have been allowed to determine whether the injury was accidental or not. If it was caused by the morphine it was not accidental, because the plaintiff voluntarily made use of the drug. But the plaintiff's own testimony and that of the surgeon who treated him tended to show that the morphine had nothing to do with the trouble. There was also a possibility that the inflammation had been caused by a lack of cleanliness in the needle or skin, in which event also the company would not be liable. But in the opinion of the Apellate Court the jury would have been warranted in rejecting the theory that morphine or uncleanliness constituted the proximate cause of the plaintiff's disability, and might have found that it was due solely to the introduction of the needle deeper than was intended in consequence of the sudden movement of the plaintiff's horse. In that case, says the court, the injury occurred through accidental means.

A Surgeon Disciplined.

The Columbus Academy of Medicine recently censured one of its members for violation of the code of ethics in permitting the publication in a daily paper of the report of an operation performed by him. The report was accompanied by a portrait of the operator. The charges brought against the surgeon were three—first, that while conducting an operation at the clinic of the Ohio Medical University he had permitted a layman to be present and witness the operation and hear the lecture on the same; secondly, that he had revised the manuscript of the article which was published; and thirdly, that he had erred in not withholding the article from publication while it was in his possession.

Successful Retro-vaccination.

The New York Board of Health, after a long series of experiments, has solved the problem of retro-vaccination—the vaccination of calves with matter taken from vesicles on children. In all, fifty calves have been inoculated with the virus taken from the children. In forty-seven of these the results of the clinical test of the virus thus produced are known. The test consists in vaccinating three places on each of five not previously vaccinated children. With the virus obtained from the animals there have been vaccinated 123 children, with a total result of 367 vesicles obtained out of 369 possible. In over 300 cases vaccinated and inspected this month at the Department 95 per cent. were successful, and the 5 per cent. of failures were all re-vaccinations.

Protest against Legislation Preventing Vivisection.

An effort has been made to pass a Bill through Congress preventing experiments on animals in the district of Columbia. The American Association of Obstetricians and Gynæcologists assembled in annual session in Richmond, Va., to protest against the passage of the Bill, stating that the enactment into law of the specified Bill would greatly interfere with and retard the investigations that are at present being conducted at Washington by the laboratories connected with the Marine Hospital, the offices of the surgeon-general of the United States army and navy, and the bureau of animal industry of the department of agriculture; and the results of their investigations have been of immense importance to the health and wealth of the people of the country; and more brilliant results are promised for the near future in connexion with preventive medicines and the health of men and animals. It was resolved that "this association protests against the proposed legislation by Congress, which has for its object the restriction of animal experimentation in the district of Columbia, and, while opposing needless cruelty and experiments upon animals in the public schools, this association considers that those who are trained in the special line of research necessary for the conduct of the work referred to are the ones best able to decide upon the advisability and utility of animal experimentation and should not be hindered in the prosecution of their humane work."

Nov. 2nd.

Obituary.

HENRY TRIMEN, M.B. LOND., F.R.S., F.L.S.

By the death of Dr. Henry Trimen in Ceylon on Oct. 16th England has lost one of her greatest botanists. He was born in Guilford-street, Russell-square, on Oct. 26th, 1843, and after being educated at King's College School he entered the medical department of King's College, London, on Sept. 27th, 1860. In 1865 he took his M.B. degree at the University of London, having at the previous examinations and at King's College shown a bias towards, and a wide knowledge of, botany, to which his whole career was to be devoted. He never practised medicine. He was curator to the museum at King's College for a year, and gave much time and attention to the collection of Indian Flora in that museum formed by Dr. Royle. He was appointed lecturer on botany at St. Mary's Hospital in 1867, and in 1869 he entered the Botanical Department of the British Museum as senior assistant. He had begun to write articles on the flora of Surrey, Hampshire, and Middlesex so early as 1862, but his first important work was the well-known "Flora of Middlesex," written in conjunction with Mr. Thiselton Dyer in 1869. In 1870 Dr. Trimen became joint editor with Dr. Seeman of the *Journal of Botany*, and afterwards became sole editor. He was at the same time engaged with the late Professor Robert Bentley in publishing a beautifully illustrated work on "Medicinal Plants," in four volumes and containing upwards of 300 coloured plates.

In 1880 he was appointed, in succession to Dr. Thwaites, to the important post of Director of the Royal Botanic Gardens in Ceylon, which he had only recently resigned. He devoted special attention to the economic and medicinal aspects of botany even when in this country, and he further developed these aspects during his residence in Ceylon. He was engaged by the Madras Government to report on the cinchona plantations in the Nilghiri hills, and he introduced into Ceylon many useful and valuable products from other countries. His botanical work was thorough and able and will always be most useful to future botanists as being absolutely reliable. His "Handbook to the Flora of Ceylon" is a model of what a handbook should be, but unfortunately, although three volumes have appeared, he was not spared to complete this, his greatest work. He suffered for many years from deafness, and this was followed by paraplegia and functional complications, so that those friends who saw him in London in the summer of 1895 were quite prepared to hear of his death.

A fellow student writes: "Henry Trimen was a quiet man, always neatly dressed and of very pleasant manners, a steady fellow, and one who would be a good guide for a younger man, yet he was cheerful and talkative when with those he liked. I used to know him as being very fond of botany; he was a great friend of Thiselton Dyer and they worked then as students together at the flora of Middlesex. I remember a note-book in which he made notes of the flowers they met with in their rambles. I saw most of him in the cholera epidemic of 1866, when he with Dr. J. Groves and Mr. Wootton were appointed by the late Dr. Conway Evans, medical officer of health in the Strand district, to make a house-to-house visitation. He was a most intelligent companion, but he never seemed to care for medicine, but intended from the first to go in for botany. He took honours at the University of London in botany at the matriculation examination in July, 1860, and in medicine at the M.B. examination in 1865. Like many others he had to work hard, and he was very pleased on receiving his appointment in Ceylon."

THOMAS LIMBERY, M.R.C.S. ENG., L.S.A.

THE death of Mr. Thomas Limbery, which occurred at his residence, Commercial-road, Newport, Mon., on Nov. 9th, will be a source of sorrow to a large circle of friends and patients. The deceased had an apoplectic seizure whilst in his surgery on the previous Friday evening, and although he rallied a little on Sunday died the day following. Mr. Limbery, who was one of the oldest and most respected of the Newport practitioners, received his medical education at University College Hospital, London, taking the qualifications of M.R.C.S. and L.S.A. in 1848. He went to Newport from Devonshire many years ago and quickly established a large practice. At the time of his death he was medical officer and public vaccinator for the Llantarnam district of the Newport Union and surgeon to several clubs. The deceased was seventy-two years of age and leaves three sons and a daughter, for whom much sympathy is felt.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Richard Kerry, *privat-docent* in Medical Chemistry and Professor of Bacteriology in the Veterinary Institute, Vienna.—Dr. M. Salazar y Alegret, a well-known Madrid physician and Member of the Spanish Academy of Medicine. He was editor of the *Anales de Ciencias Médicas*.—Dr. M. Shmeleff, Sub-Director of the Russian Medical Department.—Dr. Trastour, Honorary Professor of Clinical Medicine in the Nantes Medical School.—Dr. Smirnoff, Extraordinary Professor of Dermatology at the University of Helsingfors.—Dr. Hanot, *professeur agrégé* of the Paris Medical Faculty.

THE next meeting of the Royal Microscopical Society will be held on Wednesday, the 18th inst., at 8 P.M.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Cracow:* Dr. L. von Korczynski has been recognised as *privat-docent* in Medicine.—*Gratz:* Dr. H. Hammerl has been recognised as *privat-docent* in Hygiene.—*Konigsberg:* Dr. Falkenheim has been promoted to an Extraordinary Professorship of Children's Diseases.—*New York (Columbia College):* Dr. Rudolf Denig, Assistant in the Wurzburg Policlinic for Eye Diseases, has been appointed Professor of Ophthalmology.—*Tomsk:* Dr. A. Vvedenski of Moscow has been appointed Professor of Operative Medicine.—*Vienna:* Dr. Weinlechner and Dr. Schenk have been promoted to Ordinary Professorships of Surgery and Embryology respectively; Dr. H. F. Müller has been recognised as *privat-docent* in Medicine.

ASSOCIATION OF CERTIFYING SURGEONS.—The annual meeting of this association was held in Manchester on Oct. 23rd. There was a fair attendance considering that the members live so far apart. The report of the hon. treasurer showed the association to be in a sound financial condition, and that the income more than met the expenditure. The hon. secretary's report this year contained nothing of special interest. The following officers were elected:—President: Mr. T. Fort, Oldham. Vice-Presidents: Professor Wright, Leeds; Mr. Langley Browne, West Bromwich; Professor Charteris, Glasgow; Mr. Brown, Preston; Mr. W. Hugh Hughes, Ashton-under-Lyne; Dr. Greaves, Derby; Dr. Fraser, Wolverhampton; Mr. Machin, Birmingham; Dr. C. F. Moore, Dublin; Mr. Robins, Birmingham; and Mr. Walmsley, Manchester. Hon. Treasurer: Dr. J. C. Eames, Stoneclough. Hon. Corresponding Secretaries—for Ireland, Dr. H. S. Purdon, Belfast; for Scotland, Professor Charteris, Glasgow. Hon. Secretary, Dr. J. Holme, Whitefield.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, LEICESTER-SQUARE.—A course of lectures on the More Common Diseases of the Skin will be given by Dr. John Vinrace at 6.15 P.M. on Wednesdays, from Nov. 18th to Dec. 23rd inclusive. The subjects will be eczema, urticaria, herpes, lupus vulgaris, lupus erythematosus, scabies, pediculosis, syphilis, and alopecia. The Chesterfield Lectures will be given by Dr. Morgan Dockrell at 6 P.M. on Thursdays, from Nov. 19th to Dec. 17th inclusive, and at 2 P.M. on Saturdays, from Nov. 14th to Dec. 19th inclusive. The subjects will be epithelioma of the skin, neurosis, herpes, gangrene, leucoderma, eczema, psoriasis, syphilis, tuberculosis of the skin, ringworm, alopecia, and diseases of the sebaceous glands. All the above lectures will be illustrated by clinical demonstrations.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—Mr. H. Campbell, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., who has recently left the Garw Valley, has been the recipient from the inhabitants of Pontycymmer of a handsome morocco case of medical instruments, a silver-mounted ebony walking stick, a purse containing money, and an illuminated address.—At a well-attended meeting in connexion with the New Shildon North-Eastern Branch of the St. John Ambulance Association, held on the 25th ult in the New Shildon Mechanics' Hall, Mr. R. Smeddle, L.S.A., of New Shildon, Darlington, was presented with a handsome meerschaum pipe and pouch as a token of the esteem in which he is held by the class.—In association with the Lancashire and Yorkshire Railway Ambulance Classes Dr. John Johnston (honorary surgeon to the Bolton Infirmary), instructor of the corps, has received the present of a beautiful hand camera in gratitude for his services. At the same time Dr. Johnston presented to each member a copy of a portrait of himself as a frontispiece for his book of song and verse entitled "Musa Medica," which will shortly be issued by the Savoy Press.—Dr. G. Cran of Banchory, who has conducted an ambulance class in the Finzean School during the summer, was, on the 30th ult., presented with a clock, barometer, and thermometer combined. Dr. R. Farquharson, M.P. for West Aberdeenshire, made the presentation on behalf of the class.—Mr. James T. J. Morrison, senior surgeon to the police division of the Birmingham Branch of the St. John Ambulance Association, has been presented by the men whom he had instructed in first aid with a barometer as a token of esteem.—A well-attended annual meeting and subsequent dinner of the members of the Scottish Midland and Western Medical Society, recently held in the St. Enoch Station Hotel, Glasgow, was rendered interesting because it marked the semi-jubilee of the society and afforded the opportunity to present Dr. John Boyd of Slamannan with a complimentary illuminated address, signed by the President and other office-bearers of the society. Dr. Boyd was its first president twenty-five years since, and it was very largely through his influence that the association was formed. The president of the year, in making the presentation, referred to Dr. Boyd's long association with the society and expressed the feelings of the members that Dr. Boyd might long be spared to enjoy the ease which his prolonged labours had so well earned for him.

LITERARY INTELLIGENCE.—We have received the first number of the Norwegian Journal of Military Medicine (*Norsk Tiddskrift for Militærmedicin*), a handsomely executed magazine of forty-eight pages, edited by MM. N. Torgersen and Hans Daae of Christiania, and published by Mr. Cammermeyer of that city. We hope to give a further notice of it in a subsequent issue.

THE EXAMINATION IN SHORTHAND FOR STUDENTS OF MEDICINE.—The examination in shorthand, instituted by the Society of Medical Phonographers, for students of medicine entering on their first winter session was held in London, Edinburgh, Aberdeen, and Dublin on Oct. 31st. The first prize of £2 was gained by Mr. Joseph Byrne, student at the school of the Royal College of Surgeons in Ireland, and the second prize of £1 by Mr. Lawrence W. Pole, student at the University of Edinburgh.

UNIVERSITY OF CAMBRIDGE.—The biennial election of one-half the members of the Council of the Senate took place on Nov. 7th. In the absence of any debateable question immediately affecting the council no great interest was taken in the election, and the rival "tickets"—Liberal and Conservative—were practically identical. In the end Dr. Alex. Hill, Master of Downing and University Lecturer in Advanced Anatomy, Dr. R. C. Jebb, M.P., Mr. R. T. Glazebrook, F.R.S., Assistant Director of the Cavendish Laboratory, and Mr. A. E. Shipley, University Lecturer in Invertebrate Morphology, were among the successful candidates. Dr. Hill will probably be Vice-Chancellor next year. The Professorship of Surgery is once more suspended, at the instance of the General Board of Studies, until the first day (Jan. 8th) of the Lent term. In view of the discussion of the proposal to assign to it a provisional stipend of £300 it is not unlikely that further consideration of the available funds will result in the raising of the stipend at once to the full amount of £500, in addition to a probable College Fellowship. The professor will not *ex officio* become a surgeon to Addenbrooke's Hospital, but the governors under the new arrangement with the University have power to appoint him to a clinical lectureship in surgery. The *University Calendar* gives the names of the electors to the professorship as follows: Dr. L. Humphry, Dr. A. Macalister, Professor Foster, Sir James Paget, Dr. D. MacAlister, Dr. J. Chiene, Dr. Allbutt, and Mr. T. Holmes.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BARNETT, F. SEPTIMUS, M.R.C.S., L.S.A. Lond., L.F.P.S. Glasg., has been appointed Medical Officer and Public Vaccinator for the Lewisham District of Lewisham Union, vice J. C. Duke, resigned.

BETTS, LEONARD BOWRING, M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the Westminster Hospital.

BOYD, J. S., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the No. 6 Sanitary District of the West Ham Union.

BUNCH, J. L., M.D., M.R.C.P. Lond., has been appointed Assistant Physician to the North London Hospital for Consumption, Mount Vernon.

BYASS, T. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Dorchester Sanitary District.

CRUTTWELL, H. A., L.F.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the No. 6 Sanitary District of the Market Harborough Union.

DARLEY, ALFRED R., M.D. Dubl., has been appointed Medical Officer for the No. 6 District of the Daventry Union, vice George Harday, resigned.

GILES, A. E., M.D., B.Sc. Lond., has been appointed Surgeon to the Chelsea Hospital for Women, Fulham-road.

GRANT, LACHLAN, M.B., M.Ch., has been appointed Medical Officer to the Skye-Gesto Hospital, vice Keith N. Macdonald, resigned.

GREENWOOD, FRANK R., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Obstetric and Ophthalmic House Surgeon at the Queen's Hospital, Birmingham.

GRIFFITHS, JOHN CRISP, B.Sc., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed House Physician to the Queen's Hospital, Birmingham.

HARRIS, WILFRED, M.D., M.R.C.P., has been appointed Senior House Physician to the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, vice Stoddart, resigned.

HUGHES, E. B. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Assistant Medical Officer to the Newcastle-on-Tyne Dispensary.

JAMESON, R. C., M.B., C.M. Edin., has been appointed Dispensary Surgeon to the Bradford Infirmary, vice H. Munro, resigned.

JERMAN, ARTHUR EDWARD, M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Surgeon to Westminster Hospital.

JONES, S. E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Vaccination Officer for the Parishes of Bangor and Worthenbury.

KERR, JAMES, M.A., M.D., D.P.H. Cantab., has been appointed Honorary Medical Officer to the Bradford Infirmary vice H. Bronner.

LORIMER, J. A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Farnham and Hartley Wintney District School, vice W. D. Spurrell, resigned.

MACDONALD, P., M.A., M.B., C.M. Aberd., has been appointed Dispensary Surgeon to the Bradford Infirmary, vice B. B. Morton, resigned.

MACGREGOR, ALEXANDER, M.D., has been appointed Assistant Physician to the North London Hospital for Consumption and Diseases of the Chest.

PERN, ALFRED, L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the South Stoneham Urban District Council.

POWELL, J. H., L.R.C.S., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Second Assistant Medical Officer to St. George's Union Infirmary, Fulham-road, S.W.

ROBERTS, C. D. D., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed a Resident Medical Officer for the Children's Hospital, Birmingham.

SALMON, A. G., M.R.C.S., has been appointed Medical Officer for the Truro Union Workhouse and the St. Clement Sanitary District.

SHAW, R. H., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Liversedge District Council.

SMITH, E. ARCHIBALD, M.B., Ch.B. Vict., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Tutor and Registrar to the Royal Infirmary, Liverpool, vice John Evans.

STEWART, PURVES, M.B., C.M., has been appointed Junior House Physician to the National Hospital for the Paralysed and Epileptic, Queen square, Bloomsbury, vice Harris.

TAYLOR, JOHN, M.D., C.M. Aberd., has been appointed Parochial Medical Officer of Alves, vice G. H. Mackey.

THOMAS, E. C., M.B., M.Ch. Edin., has been appointed Medical Officer of Health by the Lampeter Rural District Council.

VEREKER, CHAS. V., L.R.C.P. Irel., L.R.C.S., has been re-appointed Medical Officer of Health by the Woolton Urban District Council.

WALLIS, P. E., L.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer of Health for the Urban Sanitary District of East Grinstead.

WEARNE, V., M.R.C.S., has been re-appointed Medical Officer by the Helston Town Council.

WICKHAM, CATHERINE MARY, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Zenana Medical Officer in Rajkot Kathiawar, India.

WILLIAMS, J. T. C., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Whitland Rural District Council.

WILLMORE, WM. S., M.R.C.S., L.R.C.P., has been appointed House Surgeon at the Queen's Hospital, Birmingham.

WOODWARD, A., M.R.C.S., has been re-appointed Medical Officer of Health by the St. Helen's Urban District Council.

WYLLIE, J., M.D. Edin., F.R.C.P., M.R.C.S. Eng., has been appointed Consulting Physician to the City Hospital, Edinburgh.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board, washing, lodging, &c.

BRISTOL CITY LUNATIC ASYLUM.—Second Medical Assistant, unmarried. Salary £120 per annum, increasing annually by £10 to £150, with furnished apartments, board (except beer, &c.), and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, London, S.W.—Non-resident Clinical Assistants, for three months, on payment of five guineas.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—House Physician for six months. Salary at the rate of £30 per annum and board and residence.

CLAYTON HOSPITAL AND WAKEFIELD DISPENSARY, Wakefield.—House Physician, unmarried. Salary £60 per annum, with board, lodging, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, W.C.—House Surgeon to Out-patients (non-resident), for six months. Salary 25 guineas.

HUDDERSFIED INFIRMARY.—Junior House Surgeon. Salary £40 per annum, with board, lodging, and washing.

LINNÆAN SOCIETY OF NEW SOUTH WALES, Sydney.—Macleay Bacteriologist.—Bacteriologist. Salary £350 per annum. Applications to Messrs. Dulau and Co., Soho-square, London, W.

LONDON HOSPITAL, Whitechapel-road, E.—Assistant Instructor in Anæsthetics.

LONDON HOSPITAL, Whitechapel, E.—Medical Registrarship. Salary £100 per annum.

LONDON LOCK HOSPITAL, Harrow-road, W.—House Surgeon for the Female Hospital. Salary £50 per annum, with board, washing, and lodging.

MASON COLLEGE, Birmingham.—Demonstrator in Physiological Department.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, London.—Two fully qualified Medical Women as House Surgeons.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch, N.E.—House Physician for six months. Salary at the rate of £60 per annum. Also Junior House Physician for six months. Board and lodging, including washing, provided. Applications to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch, N.E.—Dentist. Applications to the Secretary, Office, 27, Clement's-lane, E.C.

OLDHAM INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board and residence.

ROYAL BERKS HOSPITAL, Reading.—House Surgeon and House Physician, for six months. Salary in each case, £60 per annum, with board, lodging, and washing. Also Assistant Medical Officer, for six months. Board, lodging, and washing provided, and an honorarium of ten guineas given conditionally.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-bridge-road, London, S.E.—Two Assistant Physicians.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—House Physician for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—Assistant House Surgeon for six months. Gratuity of £10 given conditionally.

ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon. Salary £80 per annum, with board.

SUNDERLAND AND NORTH DURHAM EYE INFIRMARY.—House Surgeon, out-door. Salary at the rate of £100 per annum.

VICTORIA UNIVERSITY, Manchester.—External Examinerships.

WESTERN GENERAL DISPENSARY, Marylebone-road, London, N.W.—House Surgeon, unmarried. Salary £60 a year, with board and residence.

YORK DISPENSARY.—Medical Officer, unmarried. Salary £150 a year, with furnished apartments, coals, and gas.

Births, Marriages, and Deaths.

BIRTHS.

BRODIE.—On Nov. 6th, at Chesterfield-street, Mayfair, W., the wife of Dr. Brodie of a son.

CAIRD.—On Nov. 4th, at 21, Rutland-street, Edinburgh, the wife of F. M. Caird, F.R.C.S. Edin., of a daughter.

CHALLIS.—On Nov. 8th, at 102, High-street, Walthamstow, the wife of H. Thornton Challis, M.D., of a son.

CUTFIELD.—On Nov. 6th, at Merton House, Ross, Herefordshire, the wife of Arthur Cutfield, B.A., B.Sc., M.R.C.S., of a daughter.

DUNCAN.—On Nov. 6th, at Eccleston-street, S.W., the wife of Duncan Duncan, M.R.C.S., of a son.

GORDON-GRAY.—At Holsworthy, North Devon, the wife of Walter Gordon-Gray, M.R.C.S. Eng., L.R.C.P., of a daughter.

HEYWOOD.—On Nov. 5th, at Penrhyn, Irlams o' th' Height, Manchester, the wife of C. Christopher Heywood, M.A., M.B. Cantab., M.R.C.S., of a son.

NIVEN.—On Nov. 5th, at the Uplands, Victoria-park, Manchester, the wife of James Niven, M.A., M.B. Cantab., of a daughter.

ST. LEGER.—On Nov. 7th, at Westbury, Watford, Herts, the wife of Robert A. St. Leger, M.B., of a son.

STUART LOW.—On Nov. 3rd, at Zealand, Herne-hill, the wife of William Stuart Low, Surgeon, of a daughter.

WAINEWRIGHT.—On Nov. 8th, at Lee-terrace, Blackheath, S.E., the wife of Robert S. Wainewright, M.D., of a daughter.

WILLIAMS.—On Nov. 6th, at Hulyrood House, Beckenham, the wife of J. Lawson Williams, M.D., of a daughter.

MARRIAGES.

EDWARDS—ANDERSON.—On Nov. 10th, at St. Ann's, Soho, Gerald Dundas Edwards, L.S.A., to Sophie, only daughter of J. T. Anderson, Esq., Edinburgh.

NORTON—DOLTON.—On Nov. 4th, at St. Mary's, Newington, S.E., Henry Harvey Norton, L.R.C.P., M.R.C.S., of Kennington-park-road, S.E., to Annie Maud Dolton, third daughter of Major E. J. Dolton, Avenue House, St. Margaret's, Twickenham.

WATERHOUSE—DICKENSOHN.—On Oct. 31st, at St. Sepulchre's Church, London, by the Rev. T. W. Gibson, M.A., vicar, Tinsley Waterhouse, eldest son of John Hodgson Waterhouse, M.D., Maltby, Yorks, to Frances Robinette, third daughter of the late Barrington Dickensohn, Esq.

DEATHS.

BOWER.—On Nov. 7th, at Eastry, Dover, suddenly, Augustus Edward Bower, M.R.C.S., aged 53.

KAY.—At Clay Cross, suddenly, on Nov. 3rd, Janet Kay, wife of Thos. V. Kay, L.R.C.P., L.R.C.S. Edin.

LIMBERY.—On Nov. 8th, at Newport, Mon., Thomas Limbery, M.R.C.S., formerly of Appledore, Devon, in his 73rd year.

MCCALLUM.—At 3, Brandon street, Edinburgh, on Nov. 8th, Edward McCallum, M.A., F.R.C.S.E., aged 44 years. Flowers gratefully declined.

YEOMAN.—On Nov. 9th, at his residence, Elm Cottage, Neston, Cheshire, Christopher Wm. Yeoman, M.B., C.M. Edin.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

TUESDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (2 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY (18th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.).

THURSDAY (19th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.)

FRIDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (21st).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (17th). PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Papers: Dr. J. H. Sequeira: Tumour of Pulmonary Artery.—Mr. J. J. Clarke: Two Cases of Paget's Disease of the Nipple, one of which was Associated with Rodent Ulcer of the Thigh.—Dr. A. A. Kanthack and Mr. P. Furnival: (1) Myxo-sarcoma of Colon; (2) Multiple Polypi of Small Intestine.—Dr. A. A. Kanthack and Mr. T. S. Pigg: The Revival of an old Histological Method for Rapid Diagnosis.—Dr. W. Hunter: (1) Pulmonary Thrombosis in Typhoid Fever; (2) Cancerous Growth in Bronchus.—Mr. S. G. Shattock: Keratinising Epithelial Tumour from Scalp. Card Specimens: Dr. Hunter: Typhoid Lesion of Appendix.—Dr. H. Mackenzie: Gastric Ulcer, with Hour-glass Contraction of Stomach.

ROYAL STATISTICAL SOCIETY (Royal United Service Institution, Whitehall, S.W.).—5.30 P.M. Mr. J. B. Martin: On some Developments of Statistical Research and Methods during Recent Years (President's Inaugural Address).

WEDNESDAY (18th).—ROYAL METEOROLOGICAL SOCIETY (22, Gt. George-st., Westminster).—7.30 P.M. Papers:—Mr. W. Ellis: Report on the International Meteorological Conference at Paris, September, 1896.—Hon. F. A. Rollo Russell: Haze, Fog, and Visibility.

SOCIETY OF ARTS.—8 P.M. Maj.-General Sir Owen T. Burne: On the Arts, Manufactures, and Commerce of India. (Opening Address of the 143rd Session.)

THURSDAY (19th).—SOCIETY OF ANÆSTHETISTS (20, Hanover-square, W.).—8.30 P.M. Casual Communication:—Mr. H. B. Gardner: A New Ether Reservoir. Paper:—Mr. H. B. Gardner: On Two Cases with Obstructed Air-passages requiring an Anæsthetic.

FRIDAY (20th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-st., Cavendish-sq.).—7.30 P.M. Council Meeting. 8 P.M. Ordinary Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (16th).—LONDON POST-GRADUATE COURSE.—Roy. Lond. Ophthalmic Hospital, Moorfields, 1 P.M., Mr. R. M. Gunn: Vision Testing.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Mr. G. C. Wilkins: Nasal Polypi.

TUESDAY (17th).—LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 2 P.M., Dr. Craig: Puerperal, Lactational, and Climacteric Insanities.—Hospital for Skin Diseases, Blackfriars, 4.30 P.M., Dr. P. Abraham: New Growths of the Skin.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-st., W.C.).—2.30 P.M. Dr. Lees: Rheumatism and Heart Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Dr. Gowers: Clinical Lecture.

LONDON SKIN HOSPITAL (40, Fitzroy-square, W.).—4 P.M. Mr. A. Harbord: Syphilis, Treatment.

THE BROWN ANIMAL SANATORY INSTITUTION (University of London, Burlington-gardens, W.).—5 P.M. Dr. J. R. Bradford: Observations on the Pathology of the Kidneys.

WEDNESDAY (18th).—LONDON POST-GRADUATE COURSE.—Roy. Lond. Ophthalmic Hospital, Moorfields, 8 P.M., Mr. E. T. Collins: Orbital and Ocular Tumours.

HOSPITAL FOR CONSUMPTION, &c. (Brompton).—4 P.M. Dr. Kidd: Syphilitic Disease of the Trachea.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. S. Taylor: The Different Forms of Rheumatism.

THURSDAY (19th).—LONDON POST-GRADUATE COURSE.—Brit. Inst. of Preventive Medicine, Gt. Russell-st., W.C., 3.30 P.M., Dr. Allan Macfadyen and Mr. A. G. Foulerton: Detection of Pathogenic Micro-organisms in Urine.—Central London Sick Asylum, Cleveland-st., W., 5.30 P.M., Mr. A. Pearce Gould: Clinical Lecture.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-st., W.C.).—4 P.M. Dr. Dickinson: Selected Cases from the Out-patient Department.

FRIDAY (20th).—LONDON POST-GRADUATE COURSE.—King's College, 3 to 5 P.M., Prof. Crookshank: Erysipelas and Suppuration.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-st., W.C.).—11.15 A.M. Dr. Penrose: Diseases of the Digestive Tract.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Dr. Semon: Examination of Throat and Nose.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 12th, 1896.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Dry Bulb	Wet Bulb.	Solar Radia in Vacuo	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Nov. 6	30·38	E.	36	35	61	48	34	....	Foggy
,, 7	30·00	W.	35	34	46	46	29	0·45	Foggy
,, 8	29·55	N.E.	42	41	58	47	34	....	Raining
,, 9	30·19	N.E.	39	38	67	47	37	....	Fine
,, 10	30·40	S.W.	35	34	63	47	33	....	Foggy
,, 11	30·22	S.W.	43	42	57	51	35	....	Overcast
,, 12	30·05	S.W.	45	44	53	49	43	....	Foggy

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

TANNETTE WATERPROOF SHEETING.

THE Tannette Co., 13, St. Paul's-square, Birmingham, manufacture a new waterproof fabric which may be applied to various purposes, and for which they claim that it is always flexible and never cracks or perishes in any climate. The sample submitted to us, although very strong, is nevertheless light and perfectly flexible. It consists of a twilled material coated on one side with a black waterproof layer, well incorporated with the cloth, impervious to air and water, and not readily wetted by water. It is not in the least affected by prolonged contact with ointments or other greasy substances, and does not become sticky even though kept for some time at a heat similar to that of tepid water. These qualities obviously recommend this material for use in those cases where waterproof sheeting is required in the hospital or sickroom.

O. Z. Y.—1. It is not right for a general practitioner to announce himself on his door-plate as a specialist in this or that department of medicine. By implication he would thus claim for himself a greater experience in the particular branch than that possessed by his brother practitioners, and that would be unfair to them and not straightforward in regard to the public. That the general and special practices are situated in different localities does not mend the matter in our opinion. 2. It would be quite correct to mention the hours of attendance in the ways suggested. 3. It would be advisable to call on the other gentlemen.

Medicus.—Systematic vaccination with calf lymph, as an alternative to humanised lymph, began to be recommended in this country about 1869. Many vaccinators at that time opposed the innovation on the ground that humanised lymph was more efficacious.

M.D., &c.—We do not approve of the names of the medical men being so appended.

STUNG TO DEATH BY WASPS.

A CULTIVATOR named Pierre Gilbert, living in the village of Châtelet, Maine-et-Loire, France, was ploughing his field, lately accompanied by his wife, when the share suddenly dislodged a nest of wasps. In a moment the air was black with the enraged swarm, and after a second or two of apparent indecision the major portion fell upon the unfortunate Gilbert whose face and hands they soon thickly covered. In vain did the wretched man shriek for help; there was no one near except his wife and she, too, had to defend herself against the insects which were stinging her terribly. At last when assistance arrived Gilbert had ceased to breathe. It is thought that while he was shrieking a wasp must have entered his mouth and stung his pharynx and larynx, for death was evidently due to suffocation, and on previous similar occasions this is what has occurred. The woman was very severely injured, but her life is not in danger. Apparently the animals drawing the plough escaped entirely.

Hants.—No one but a solicitor can possibly advise our correspondent. In justice it would seem right that the original owner of the practice, not having received the consideration for which he parted with his practice, should be allowed to enter into his own again. But equally in justice the man who purchased that practice from the intermediate holder should be allowed to have what he has paid for.

"LOCAL HOT-AIR TREATMENT."

To the Editors of THE LANCET.

SIRS,—Will you allow me to point out to your correspondents and others interested in the application of hot air locally that the real question of priority is not that of its application pure and simple, but of its application efficaciously? In a paper on the Turkish Bath, which appeared in the *Revue d'Hygiène Thérapeutique* in 1889, I quoted numerous instances showing that primitive people resort to it intuitively, and I have no doubt that dozens of practitioners, who have had personal experience of the sedative effect of a general bath of hot air as in the Turkish bath must have rigged up, as I have myself, some kind of local hot-air bath for topical applications. "Medicus" is quite right in stating that hot-air baths were generally known twenty years ago, as a glance at that incomparable work, Dr. Neale's "Medical Digest," which is too little known to many of your correspondents, will show. The references go back to the early seventies. There is, however, a book on the subject by Dr. Goyot, "De l'Incubation," in which as far back as 1840 the value of hot air, especially in preventing pyæmia, purulent absorption, and similar post-operative complications then so fatal, especially in Paris, is shown. This work contains a number of figures of apparatus, but the author and his system are so completely forgotten that the son of the instrument maker mentioned in the work had no recollection of them, and could find no trace of any such fabrication. Verneuil was in the habit of using the *caisse* of hot air in local tuberculosis, and for some time Dr. Gauthier has been experimenting in the same direction with apparatus heated by the passage of a current through a wire spiral. There is nothing new then in the local application of hot air. The peculiarity of the Tallerman-Sheffield treatment consists in the use of such high temperatures as 300° F., which is only possible by keeping the air dry. In an ordinary box the perspiration, which is soon excited, shortly renders the atmosphere so moist that temperatures of 110° and 120° are as much as can be borne with comfort. In short, with ordinary apparatus a local hot-air bath is nothing more than a vapour bath, and all those who are practically acquainted with the question will recognise the value of the Tallerman-Sheffield invention if it really provides us with a means of keeping the hot air dry and reaching a temperature of 300°.

I am, Sirs, yours truly,

Paris, Nov. 3rd, 1896. OSCAR JENNINGS.

A. B. C.—The *Semaine Médicale* of Dec. 11th, 1895, gives no information as to the original source of the article and no discussion as to the botanical position of calaya, only giving its name Annesles febrifuga (Légumineuse mimosée).

THE BLATTA ORIENTALIS AS A THERAPEUTIC AGENT.

AT a certain London hospital a patient was recently given some extract of malt with instructions to take a teaspoonful twice a day, commencing on the following morning, and to report himself at the end of a fortnight. At the expiration of this time he returned and said to the physician, "Please, sir, am I to go on taking them insects you gave me?" "Insects," said the astonished physician, "what insects?" "Why, them cockroaches, sir. I've taken one night and morning in a teaspoonful of the sticky stuff." Inquiry elicited that the cockroaches had not been dispensed, but had got into the jar during the first night of its stay in the patient's house.

Scotland.—We regret to be unable to give our correspondent any definite reply. Either style for himself and his brother would be correct, but which is the right one to be used depends upon the special circumstances of the case.

Mr. Clement H. Sers.—The subject is hardly of sufficient medical interest to warrant us in opening the columns of THE LANCET to a correspondence.

THE PROTECTION OF HARROGATE SPRINGS.

To judge from the newspaper press of Harrogate great anxiety prevails in the medical profession in connexion with the proposals of speculative builders and others as to possible damage to the medicinal springs of Harrogate. It is inconceivable that public sanction should be given to any building operations involving deep drainage which would, or which by any possibility might, endanger the contamination of the wells, upon the integrity of which the *raison d'être* of Harrogate depends. Even Parliament itself should be invoked, if necessary, by the town council to avoid such a catastrophe. In the local press are to be found various letters showing much concern on the subject, and calling on all good councillors to forget personal differences and save Harrogate from a calamity. We gather that some inhabitants make light of the medical fears on this subject. But the forces that are at work in this age of speculative building are a veritable danger and would make short work of sulphur or iron springs if a few thousand pounds could be made. We look confidently to the public authorities of Harrogate to act with vigilance and with promptness in this almost national matter. Too many of our invalids already have to seek in foreign countries advantages and cures which Harrogate can well supply.

A.M., M.D.—We cannot be certain that we understand the communication. If we do we think the wording of the letter unfortunate.

"POST-PARTUM HÆMORRHAGE AND ITS TREATMENT."

To the Editors of THE LANCET.

SIRS,—With reference to the article under the above heading in THE LANCET of Oct. 31st may I enquire whether Davy's lever for compressing the aorta is ever used in such cases?

I am, Sirs, yours faithfully,

Nov. 3rd, 1896. RINALDO.

Alpha's bargain was made with B., and B. appears to have kept faith. C. seems to us to have taken advantage of the situation in placing B.'s brother in the district which B. had agreed to vacate.

WANTED A HOME.

To the Editors of THE LANCET.

SIRS,—Can you or any of your readers tell me of a home between this and London (or in London) where imbecile children would be taken in and cared for free of charge and an effort made to develop their faculties so as to make them of some use in after years? I have a poor woman under my care whose eldest child aged six years is an idiot and a great burden to her parents. Since I have been treating the child's mother I have noticed signs of improvement in the child, and it has occurred to me that if she could be properly looked after the improvement would increase. The parents are poorly off, the husband being a porter on the Midland Railway, but they would endeavour to pay a little towards the maintenance of the child.

What are the Darenth Schools?

I am, Sirs, yours faithfully,

A. B. CAREY ORCHARD.

East-terrace, Gerard-street, Derby, Nov. 11th, 1896.

*** The Darenth Schools are under the jurisdiction of the Metropolitan Asylums Board. They are for the reception of imbecile children. The London School Board has centres for the instruction of mentally defective children.—ED. L.

J. A. R. (Southport).—It would be wrong. It would be unfair to practitioners in the neighbourhood of the friend's house.

During the week marked copies of the following newspapers have been received:—*Newcastle Journal, Bucks Herald, Southampton Times, Edinburgh Evening Dispatch, Exeter Evening News, Torquay Times, Peterborough Advertiser, Herne Bay Argus, Kettering Guardian, Times of India, Norfolk Chronicle, Doncaster Chronicle, Pioneer Mail, Scotsman, Wolverhampton Chronicle, Liverpool Daily Post, Builder, Lancaster Guardian, Worcester Journal, Devizes Gazette, Cheltenham Free Press, Leicester Post, South Wales Daily News, Western Daily Mercury, Cleckheaton Guardian, Preston Guardian, Birmingham Post, Liverpool Courier, Eastern Morning News, Yorkshire Post, Suffolk Chronicle, Grantham Times, Bingley Chronicle, Bradford Observer, Sheffield Telegraph, Leeds Mercury, Manchester Guardian, Dudley Herald, Bristol Mercury, Brighton Gazette, Architect, Sanitary Record, Hertfordshire Mercury, Weekly Free Post and Aberdeen Herald, Reading Mercury, Mining Journal, Local Government Chronicle, City Press, Surrey Advertiser, Local Government Journal, Auckland Chronicle, Pulman's Weekly News, Court Journal, Bolton Evening News, Manchester Courier, East London Observer, South Eastern Gazette, Aberdare Times, Bedworth Guardian, Congleton Chronicle, Langport and Somerton Herald, Newry Reporter, Stowmarket Courier, Workington News, Yarmouth Mercury, Banffshire Advertiser, West Middlesex Herald, Kerry Sentinel, Ormskirk Advertiser, Paisley Daily Express, &c., &c.*

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